

A photograph of two surgeons in blue scrubs and white masks, wearing Sony AR headsets. The headsets are white and have the Sony logo on them. The background is a plain, light blue gradient.

SONY

Medical Catalogue 2014

www.pro.sony.eu/medical

Recognised for quality



Committed to innovation

At Sony we're proud of our unmatched heritage in providing a clearer picture for medical practitioners.

For more than thirty years we've led the way with innovative, easy to use quality medical printers to support the work of clinical staff.

Over the last decade Sony has pioneered the evolution from Standard Definition to High Definition imaging in medical environments. And today we're constantly redefining clarity right across the hospital workflow – from High Definition cameras and recorders to monitors and printers for use in medical environments.

Our imaging, recording and networked sharing tools integrate seamlessly with a wide range of modern modalities in today's operating room and beyond. Just as importantly, they're designed for smooth interworking with legacy medical products and systems from Sony and other manufacturers.

We've always got an eye on the future. And now we're innovating further with an exciting new generation of tools that extend 3D workflow from image acquisition to display.

Sony's breadth of experience in developing cutting edge imaging technologies is second to none, spanning television broadcasting, digital cinematography and advanced medical vision applications.

Refining this unique insight through constant dialogue with healthcare professionals worldwide, we create medical products and solutions that offer dependable performance in modern clinical environments.



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Accessories



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Cameras – capturing clarity

Application-specific SD & HD medical cameras

We're continually challenging the boundaries of medical imaging technology.

Sony's range of HD and Standard Definition colour video cameras helps clinicians capture medical 2D and 3D content with clarity and precision.

We offer a range of application-specific camera solutions for a diverse range of challenging fields including ophthalmology, neurosurgery, pathology, biomedical research and veterinary science.



MCC-3000MT

1/2 inch 3CMOS 3D Full HD Colour Video Camera

Suitable for: Surgical Microscopy

Separate 3D video camera with twin camera heads and single CCU for operating microscopes, delivering high-precision 3D images of operating field.

- Superb quality of stereoscopic 3D HD and 2D HD images
- C-mount compatible compact and lightweight camera head
- Easy parameter adjustment (including colour matching and white balance) with single CCU

Features

- Simultaneous control of left and right camera heads
- Incorporates 3-chip 1/2-inch type Exmor Full HD CMOS sensor
- HD-SDI interfaces

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



PMW-10MD

1/2 inch 3CMOS Full HD Colour Video Camera

Suitable for: Surgical Microscopy

Unrivalled HD performance, groundbreaking technology and its 2-piece design combine to make the PMW-10MD the ideal solution for ultimate image quality in microscopic applications.

- High sensitivity delivers detail in low light environments
- Small, lightweight C-mount camera head for easy integration
- On-board HD recording capability

Features

- Incorporates 3-chip 1/2-inch Exmor Full HD CMOS sensor
- DVI-D and HD-SDI outputs
- Two SxS Memory card slots

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A





MCC-500MD

1/3 inch Full HD single CMOS Colour Video Camera

Suitable for: Surgical Microscopy

This Space-saving two-piece camera offers HD image quality and convenient integration with modern medical modality devices.

- C-mount compact and light weight
- Wide Variety of Video Formats – from SD to Full HD (1080/60p)
- Picture Profiles allow you to easily call up customized picture-tonal settings

Features

- 1/2.9-type single Exmor™ CMOS image sensor
- HDMI and HD-SDI outputs



DXC-C33P

1/3 inch 3CCD Colour Video Camera

Suitable for: Surgical Microscopy

The 2-piece compact design makes this model a perfect fit for space-limited applications, whilst offering great picture resolution and many useful features.

- Ultra-small 3CCD remote camera head
- High resolution
- DV connection to compatible VTR

Features

- Incorporates one of the smallest/lightest camera head units
- High horizontal resolution of 800 TV lines
- DV output allows image recording into i.LINK interface equipped VTR with no deterioration

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



Product compliance
EN 60601-1, EN 60601-1-2



Lens shown is optional



DXC-990P

DXC-390P

DXC-990P

1/2 inch 3CCD Colour Video Camera

Suitable for: Microscopy, Observation

With so many functions, the DXC-990P is the perfect choice for a variety of applications. It incorporates ExwaveHAD™ technology which greatly improves camera sensitivity and reduces smear.

- Superior picture quality
- Advanced digital signal processing

Features

- ExwaveHAD™ technology provides excellent sensitivity and low smear levels
- High horizontal resolution of 800 TV lines
- Complies with the MDD when used with optional CMA-D2MD AC power supply

Product compliance
EN 60601-1, EN 60601-1-2



Lens shown is optional

DXC-390P

1/3 inch 3CCD Colour Video Camera

Suitable for: Microscopy, Observation

Feature-rich and using a C-mount lens, this ExwaveHAD™ camera is ideal where picture accuracy and detail are essential.

- High picture quality
- Wide choice of available lenses from various manufacturers
- Small and lightweight

Features

- ExwaveHAD™ technology provides excellent sensitivity and low smear levels
- High horizontal resolution of 800 TV lines
- Complies with the MDD when used with optional CMA-D2MD AC power supply

Product compliance
EN 60601-1, EN 60601-1-2



Lens shown is optional



Video Recorders – a lasting image

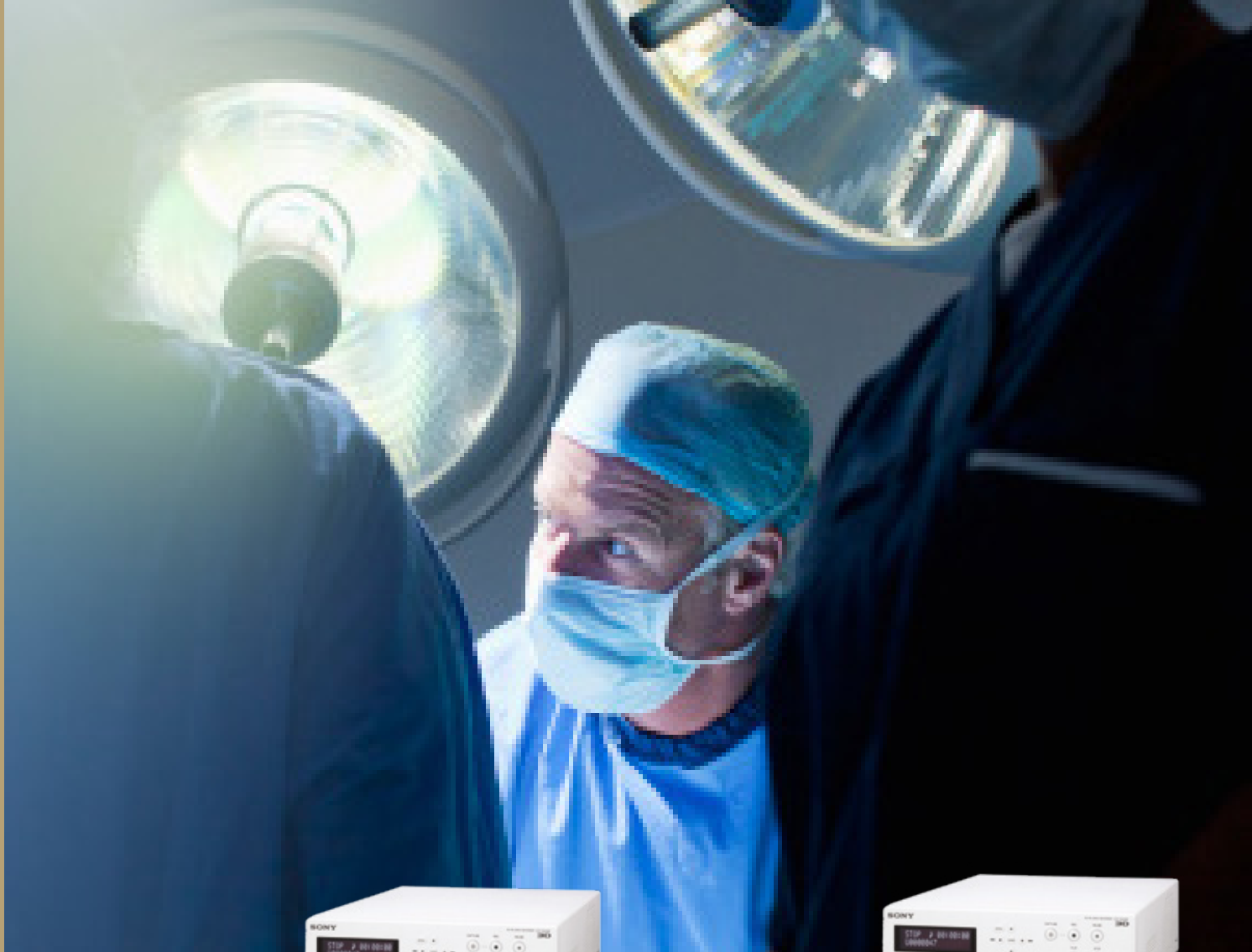
Versatile recording and storage solutions for efficient workflow

Sony understands the clinician's needs for surgical records for diagnostic review and training as well as radiology and ultrasound. With recording solutions from Sony you can rely on the clarity and integrity of medical images for years to come.

Every product supports efficient workflow with powerful random access storage capabilities, plus enhanced security to protect patient data.



HVO-3000MT



HVO-3000MT

3D & 2D Full HD Medical Video Recorder

Suitable for: Surgical Microscopy, Surgical Endoscopy, Robotic-Assisted Surgery in 3D

Designed specifically for recording long-playing 3D and 2D HD images from OR medical cameras and simultaneous patient monitor information.

- Can record and playback high quality 3D and 2D video with simple operation
- Accept 3D HD video input from HD-SDI and DVI sources with high resolution of 1080 vertical lines up to 60 progressive frames per second
- Simultaneous recording on internal hard drive, DVD/Bluray Disc drive and USB slot

Features

- Real-time distribution with a streaming function
- Broad Support of media for data exchange
- High quality HD recording (MPEG-4 AVC/H.264 compression)
- Large capacity hard disc for long recording capability
- Wide range of Interfaces
- Network data transmission through FTP or CIFS
- Pre-install Sony USB printer driver
- Still and motion image capture

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class B



HVO-1000MD

Full HD Medical Video Recorder

Suitable for: Surgical Microscopy, Endoscopy, Ultrasound, Radiology

To make efficient use of the operating theatre and to drastically improve the way doctors use surgical images, the HVO-1000MD offers many recording advantages and makes a significant contribution to effective hospital data management.

- High quality HD recording
- Simultaneous recording on internal hard drive, DVD/Blu-ray Disc™ drive and USB slot
- Easy to use operation via menu or external touchscreen

Features

- Real-time distribution with a streaming function
- Broad Support of media for data exchange
- High quality HD recording (MPEG-4 AVC/H.264 compression)
- Large capacity hard disc for long recording capability
- Wide range of Interfaces
- Network data transmission through FTP or CIFS
- Pre-install Sony USB printer driver
- Still and motion image capture

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class B



HVO-500MD

HD Medical USB Recorder



Suitable for Ultrasound, Radiology, Endoscopy and surgical applications

This High Definition Video recorder is designed to support modern workflows with HDD/USB/NAS recording. The compact design allows for easy integration in ultrasound systems or surgical carts.

- Simultaneous recording on two types of storage media
- Extensive digital and analog interfaces from SD to the latest HD modalities
- Easy integration thanks to various remote controls

Features

- Safe recording thanks to Pre-Recording function
- Supports Full HD-video input through DVI & HDMI as well as standard SD-video-interfaces
- HD (720p) and SD (576i/480i) recording resolutions
- Remote interfaces : USB, RS-232C, Footswitch and Monitor remote
- Compact, lightweight and silent design

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class B



HVO-550MD

HD Medical DVD recorder



Suitable for Ultrasound, Radiology, Endoscopy and surgical applications

This High Definition Video recorder is designed to support modern workflows with HDD/USB/NAS recording as well as DVD disc. The compact design allows for easy integration in ultrasound systems or surgical carts.

- DVD-R digital recording
- Simultaneous recording on two types of storage media
- Extensive digital and analog interfaces from SD to the latest HD modalities
- Easy integration thanks to various remote controls

Features

- Safe recording thanks to Pre-Recording function
- Supports Full HD-video input through DVI & HDMI as well as standard SD-video-interfaces
- HD (720p) and SD (576i/480i) recording resolutions
- Remote interfaces : USB, RS-232C, Footswitch and Monitor remote
- Compact, lightweight and silent design

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class B



HVO-500MD/FHD

HD Medical USB Recorder



Suitable for Ultrasound, Radiology, Endoscopy and surgical applications

This High Definition Video recorder is designed to support modern workflows with HDD/USB/NAS recording. The compact design allows for easy integration in ultrasound systems or surgical carts.

- Simultaneous recording on two types of storage media
- Extensive digital and analog interfaces from SD to the latest HD modalities
- Easy integration thanks to various remote controls

Features

- Safe recording thanks to Pre-Recording function
- Supports Full HD-video input through DVI & HDMI as well as standard SD-video-interfaces
- HD (1080i/720p) and SD (576i/480i) recording resolutions
- Remote interfaces : USB, RS-232C, Footswitch and Monitor remote
- Compact, lightweight and silent design

HVO-550MD/FHD

HD Medical DVD recorder



Suitable for Ultrasound, Radiology, Endoscopy and surgical applications

This High Definition Video recorder is designed to support modern workflows with HDD/USB/NAS recording as well as DVD disc. The compact design allows for easy integration in ultrasound systems or surgical carts.

- DVD-R digital recording
- Simultaneous recording on two types of storage media
- Extensive digital and analog interfaces from SD to the latest HD modalities
- Easy integration thanks to various remote controls

Features

- Safe recording thanks to Pre-Recording function
- Supports Full HD-video input through DVI & HDMI as well as standard SD-video-interfaces
- HD (1080i/720p) and SD (576i/480i) recording resolutions
- Remote interfaces : USB, RS-232C, Footswitch and Monitor remote
- Compact, lightweight and silent design

The HVO-500MD/FHD and HVO-550MD/FHD models are the same product as HVO-500MD and HVO-550MD respectively, but are upgraded versions to record in full HD.



Monitors – displaying the detail

Medical monitors that deliver outstanding image quality

The clarity and resolution of medical imaging is becoming increasingly lifelike. And as it does, the role of the medical monitor in supporting critical decisions is more crucial than ever. An obvious example is in surgery, where a surgeon's ability to distinguish clearly between different tissue types before making an incision is paramount.

"Monitors are shown with optional display stand."



PVM-2551MD Medical OLED Monitor

Suitable for: Microscopy, Endoscopy

The Sony PVM-2551MD is the first medical monitor with OLED technology and displays images in outstanding brilliance with in-depth detail.

- Wide dynamic range – accurate colour reproduction in dark areas of the displayed image
- Quick response – virtually no motion blur
- Wide colour gamut – reproduces small differences in colour

Features

- Panel Resolution Full HD (1920 x 1080 pixel)
- Variety of Gamma curve settings
- Noise filter
- Direct input selection
- Key inhibit function
- Easy-clean flat-surface panel
- Installation-friendly cabling
- Standard VESA mounting

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A





LMD-2451MD

24 inch Medical Full HD LCD Monitor

Suitable for: Microscopy, Endoscopy

The innovative LMD-2451MD has Advanced Image Processing Technology and enables physicians to see still and moving images with accurate, HD clarity and pinpoint precision.

- Exceptional HD monitor with class-leading resolution
- Original ChromaTRU colour processing technology
- Superb quality WUXGA panel
- DVI loopthrough possible with BKM-256DD board

Features

- Panel Resolution WUXGA (1920 x 1200 pixels)
- Accepts almost any signal from SD to HD video
- Standard VESA mounting
- Multi-input capability (HD and SD signals from both analogue and digital sources)
- Selectable Gamma curves
- Key inhibit function

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



LMD-2110MD

21 inch Full HD Medical Monitor

Suitable for: Microscopy, Endoscopy

Offering superb picture quality, the feature-rich LMD-2110MD is ideal for video endoscope cart installation.

- Versatile Video and PC inputs ranging from SD to HD
- Two types of interpolation methods for high-quality image reproduction
- Improved picture stability when exposed to high electromagnetic fields in medical environments, i.e. electrical knife

Features

- Panel Resolution Full HD (1920 x 1080 pixels)
- Accepts signals ranging from SD to HD video, analogue VGA to SXGA PC input, as well as HDMI input
- HD-SDI input available by optional adaptor
- Parallel and serial remote control ports as standard
- User memory provides the capability of saving 20 patterns of memory settings
- Standard VESA mounting

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



LMD-1951MD

19 inch Medical LCD Monitor

Suitable for: Microscopy, Endoscopy

This high resolution LCD monitor with superb picture quality and DC power supply is ideal for surgery arm mount and trolley based applications.

- LED backlight for high contrast and brightness
- Power via AC adaptor or direct DC in
- 10 bit signal processing for enhanced picture quality

Features

- Panel Resolution SXGA (1280x1024 pixels)
- Accepts signals ranging from SD to HD video, analogue VGA to SXGA PC input, as well as DVI-D input
- 5 types of optional input adaptors are offered for use in two rear slots
- Parallel and serial remote control ports as standard
- User Memory provides the capability of saving 20 patterns of memory settings
- Standard VESA mounting

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



LMD-1530MD

15 inch Medical LCD Monitor

Suitable for: Microscopy, Endoscopy

This high resolution LCD monitor with superb picture quality and DC power supply is ideal for Surgery Arm Mount applications.

- Full range of SD inputs & HDMI
- IPS LCD panel
- Wide viewing angle

Features

- Panel Resolution WXGA (1280 x 768 pixels)
- Anti-reflection (AR) coated protection panel
- Standard VESA mounting
- Parallel control interface

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A





HMS-3000MT

3D Head Mounted Display System

Suitable for: surgical 3D applications

The Sony HMS-3000MT is a personal viewing system that provides a 3D colour video display of images from 3D surgical endoscopic/laparoscopic camera systems and other compatible 3D medical imaging systems.

- The system consists of the HMI-3000MT camera control unit plus HMM-3000MT head mounted display.
- Connect a second headset to the camera control unit for simultaneous viewing by a second user.

Features

- Video input signals can be either 2D or 3D
- Image manipulation in both landscape or portrait
- Picture in picture mode for simultaneous display of a secondary image in a smaller inset window
- Range of image adjustment functions
- 1280x720 resolution from the two 0.7 inch panels
- SDI/HD-SDI, DVI-D and HMM outputs for viewing on an external monitor

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



LMD-2451MT

24 inch 3D Medical LCD Monitor

Suitable for: Endoscopic Surgery, Conferences, Education, Training

With the introduction of the LMD-2451MT, Sony brings the third dimension back into operating theaters. With its circular polarized technology and multiple input possibilities it's the perfect choice for medical 3D imaging.

- Delivers a stress-free viewing experience of natural depth with smooth, uninterrupted viewing of multiple monitors and flicker-free 3D images
- Optional BKM-250TGM 3G-SDI input adaptor enables a variety of 3D display functions to support optimum 3D settings and adjustments
- Also features 2D monitor functionality

Features

- Panel Resolution WUXGA (1920 x 1200 pixels) with pioneering 3D technology
- Multiple 3D formats
- Features unique ChromaTRU colour matching technology
- Superb brightness and contrast
- Natural gradation and accurate colour reproduction
- Gamma curve selection
- Multiple display modes available
- Mirror image function
- Protected controls functionality
- Key Inhibit function

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A





LMD-3251MT

32 inch Medical Full HD LCD Monitor

Suitable for: Endoscopic Surgery, Conferences, Education, Training

With the introduction of the LMD-3251MT, Sony expands the range of 3D monitors available for operating theatres.

- Delivers a stress-free viewing experience of natural depth with smooth, uninterrupted viewing of multiple monitors and flicker-free 3D images
- Optional BKM-250TG 3G-SDI input adaptor enables a variety of 3D
- Also features 2D monitor functionality

Features

- Panel Resolution Full HD (1920 x 1080 pixels) with 3D pioneering technology
- Features unique ChromaTRU colour matching technology
- Gamma curve selection and multiple display modes
- Multiple 3D formats
- Superb brightness and contrast
- Protected controls functionality



LMD-4251TD

42 inch 3D Professional LCD Monitor

Suitable: for Conferences, Education, Training and other non-medical applications

This widescreen 3D LCD monitor incorporates a WUXGA LCD panel providing Full HD resolution images with pioneering 3D technology.

- Delivers a stress-free viewing experience of natural depth with smooth, uninterrupted viewing of multiple monitors and flicker-free 3D images
- High purity colour filters ensure precise colours
- Optimised for group viewing with a very wide viewing angle
- Also features 2D monitor functionality

Features

- Panel Resolution Full HD (1920x1080 pixels) with pioneering 3D technology
- Future-proofed longevity with multi-format and HD capability
- Unique ChromaTRU colour matching technology
- Numerous 3D display features
- Protected controls functionality



Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



Public displays for general purpose



FWD-S42H2, FWD-S46H2

42/46 inch Full HD LED Backlit Public Display

Suitable for: Clinical Review, Training Rooms, Telemedicine, Distance Learning

Sony slim-bezel professional public displays provide brilliant and dynamic messaging in Full HD.

- 1080 Full HD – high resolution of 1920 x 1080
- High brightness – allowing for use in bright light conditions
- DICOM Gamma – for picture viewing in medical applications
- Landscape / Portrait – adaptable for a variety of applications

Features

- Screen Saver
- Picture-in-Picture
- Eco Mode
- Display Control via RS232C/RJ45
- Multi-Display
- True Colour Control
- Low power and environmentally conscious



FWD-40W600P

40 inch BRAVIA professional Full HD LED display

Suitable for: Clinical Review, Training Rooms, Telemedicine, Distance Learning

This slim, energy-efficient 40" Full HD LED display is easy to install, with multiple connections and Wi-Fi networking on board.

- 1080 Full HD - high resolution of 1920 x 1080
- High brightness - allowing for use in bright light conditions

Features

- Integrated media player
- Energy-saving ambient light sensor
- D-Sub 15 pin and HDMI input connections





FWD-47W800P, FWD-55W800P

BRAVIA professional Full HD LED Display

Suitable for: Teaching and clinical review

These slim, energy efficient Full HD LED displays are easy to install with multiple connections and Wi-Fi networking on board. Additionally USB playback makes it easy to share recorded content for clinical review or teaching purposes.

- 1080 Full HD - high resolution of 1920 x 1080
- High brightness allowing for use in bright light conditions

Features

- Integrated media player allows content to be shared direct from USB in a wide range of formats
- Energy-saving ambient light sensor



FWD-84X9005

4K 84 inch BRAVIA LCD panel

4K

Suitable for: Teaching and clinical review

The FWD-84X9005 BRAVIA LED incorporates a 4K (3840 x 2160 pixels) LCD panel, with four times the pixels of Full HD, achieving 52 ppi (pixels per inch) even on its extra large 84-inch high-resolution screen.

- 16:9 4K resolution (3840 x 2160 pixels)
- Upscales Blu-ray 3D Full-HD resolution 3D images to 4K (3840 x 2160) images
- Plug-in and go: D-Sub15-pin and HDMI input connections

Features

- SimulView™: allows two viewers to watch separate Full HD 3D pictures at the same time without a split screen
- Includes two pairs of 3D passive glasses





Diagnostic Radiology Displays

The all-new Sony LMD-DM series of diagnostic radiology displays feature high-luminance and high-contrast to deliver excellent clarity across CT, MRI, CR and DR X-ray, nuclear medicine and digital mammography.



LMD-DM20C

2 MP Monochrome LCD Diagnostic Display

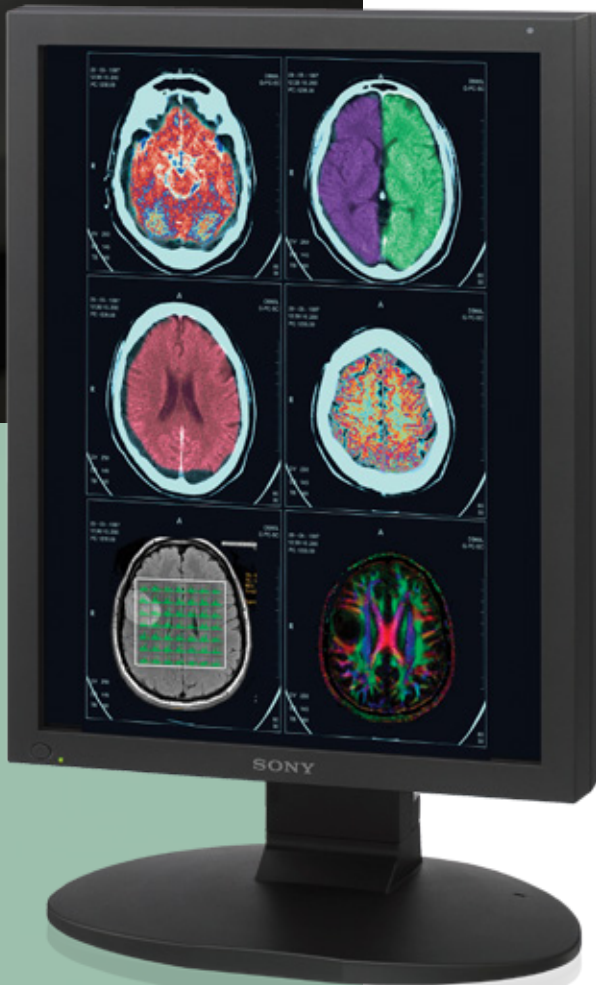
Suitable for: CT, MRI, Nuclear Medicine, CR/DR, PACS

- Resolution: 1200 x 1600
- High Luminance: 1800 cd/m²
- High Contrast 700:1 (typ)

Features

- Equipped with Display port which supports 10 bit output
- Luminance Stabilization System with built-in luminance sensor
- Digital Uniformity Equalizer for accurate luminance
- Remote calibration with the optional LMD-KT10 Kit and LMD-SN10 Display Network manager
- Flexible Display Positioning
- Luminance and Gamma Presets

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class B



LMD-DM30C

3 MP Colour LCD Diagnostic Display

Suitable for: CT, MRI, Nuclear Medicine, CR/DR, PACS

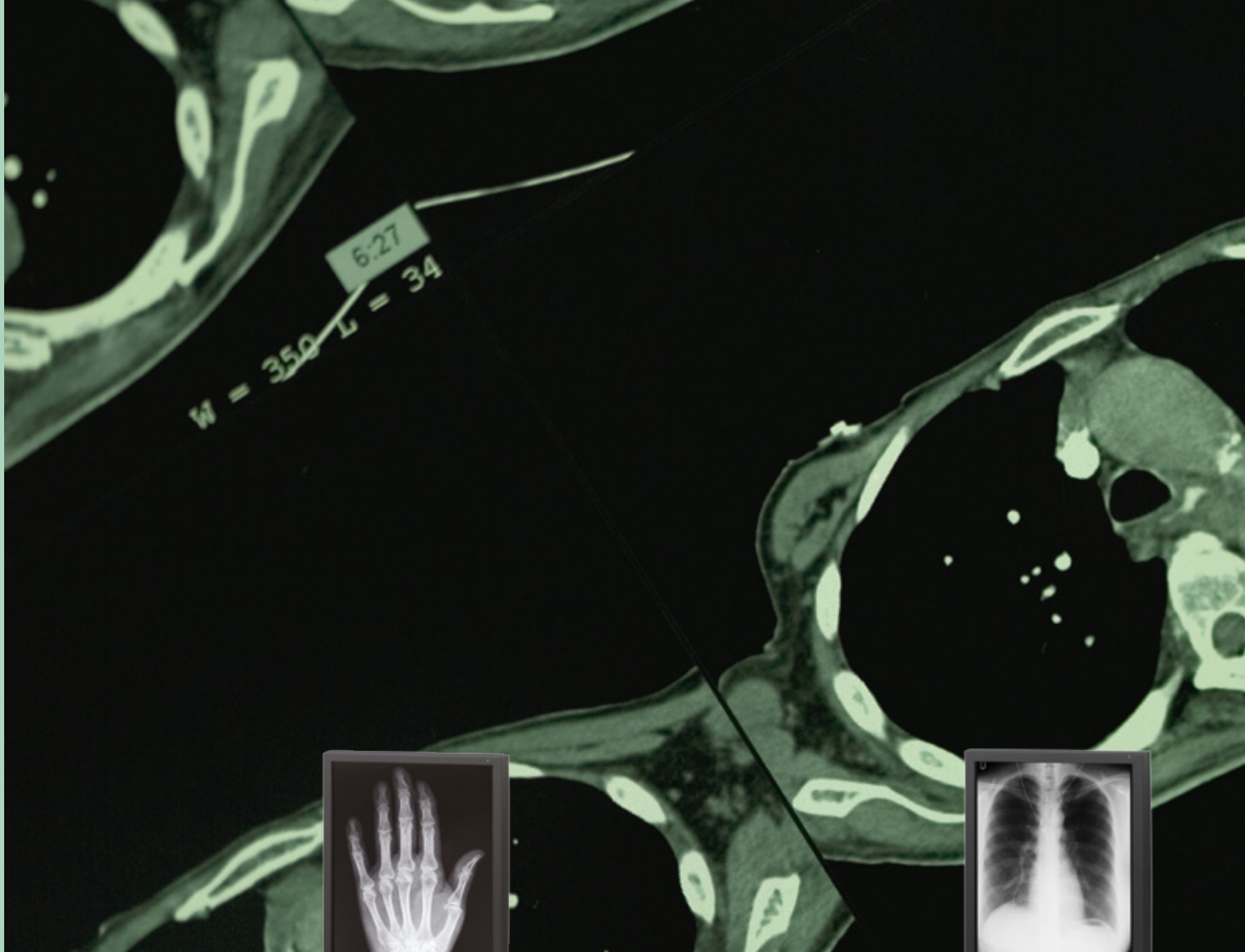
- Resolution: 1536 x 2048
- High Luminance: 800 cd/m²
- High Contrast 750:1 (typ)

Features

- Equipped with Display port which supports 10 bit output
- Luminance Stabilization System with built-in luminance sensor
- Digital Uniformity Equalizer for accurate luminance and colour
- Remote calibration with the optional LMD-KT10 Kit and LMD-SN10 Display Network manager
- Flexible Display Positioning
- Luminance and Gamma Presets

Product compliance
MDD Approved
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class B





LMD-DM20C

2 MP Colour LCD Diagnostic Display

Suitable for: CT, MRI, Nuclear Medicine, CR/DR, PACS

- Resolution: 1200 x 1600
- High Luminance: 950 cd/m²
- High Contrast 900:1 (typ)

Features

- Equipped with Display port which supports 10 bit output
- Luminance Stabilization System with built-in luminance sensor
- Digital Uniformity Equalizer for accurate luminance and colour
- Remote calibration with the optional LMD-KT10 Kit and LMD-SN10 Display Network manager
- Flexible Display Positioning
- Luminance and Gamma Presets

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class B



LMD-DM30

3 MP Monochrome LCD Diagnostic Display

Suitable for: CR/DR, CT, MRI, Digital Mammography, PACS

The LMD-DM30 can achieve 9MsP resolution by using the Independent Sub-pixel Drive technology and can be used in this case for Digital Mammography as well.

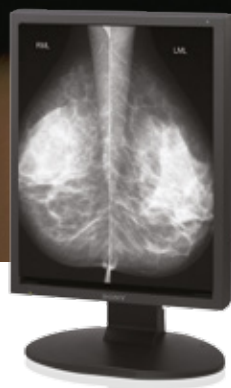
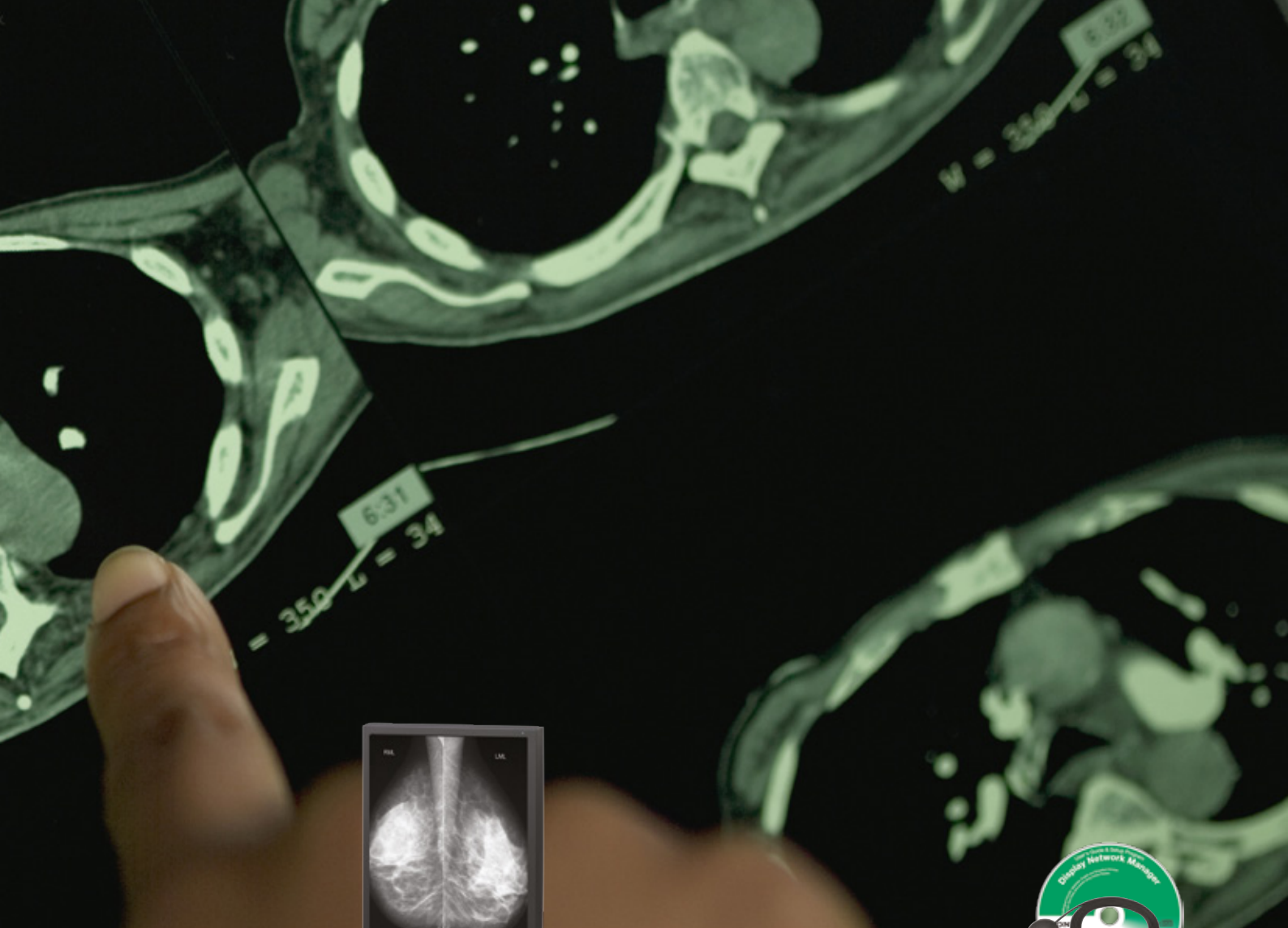
- Up to 9 MsP by using Independent Sub-pixel Drive technology
- Resolution: 1536 x 2048
- High Luminance: 1000 cd/m²
- High Contrast 900:1 (typ)

Features

- Equipped with Display port which supports 10 bit output
- Luminance Stabilization System with built-in luminance sensor
- Digital Uniformity Equalizer for accurate luminance
- Remote Calibration with the optional LMD-KT10 Kit and LMD-SN10 Display Network manager
- Flexible Display Positioning
- Luminance and Gamma Presets

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A





LMD-DM50

5 MP Monochrome LCD Diagnostic Display

Suitable for: Digital mammography, PACS, CR/DR

The LMD-DM50 offers a high resolution of 5 MP required in Digital Mammography. Moreover Independent Sub-pixel Drive technology which triples the resolution is capable of improving the diagnosis by showing more accurate details.

- Up to 15 MsP by using Independent Sub-pixel Drive technology
- Resolution: 2048 x 2560
- High Luminance: 1100 cd/m² and
- High Contrast 850:1 (typ)

Features

- Equipped with Display port which supports 10 bit output
- Luminance Stabilization System with built-in luminance sensor
- Digital Uniformity Equalizer for accurate luminance
- Remote Calibration with the optional LMD-KT10 Kit and LMD-SN10 Display Network Manager
- Flexible Display Positioning
- Luminance and Gamma Presets

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



LMD-KT10

Diagnostic Display Calibration Kit

Kit comprised of a calibration sensor and application software for quality control and evaluation of LMD-DMseries LCD Displays.

- Display Calibrator
- Display Quality Controller
- Display Utility Software
- Calibration sensor

Product compliance
EN 60601-1, EN 60601-1-2



LMD-SN10

Diagnostic Display Network Manager Software

- Remote calibration of multiple diagnostic Displays via hospital network
- Remote workstation administration
- Maintenance/constancy test & report
- Licence for 10 displays



MDD Approved





Printers – documenting the detail

Dedicated medical printers for every application

Sony print technologies – direct thermal printing for black and white images, and dye sublimation printing for colour images – provide superb reproduction of grey levels and colour tints, together with exceptional resistance to fading.

Kinder on the environment

The entire range of Sony medical printers employs an advanced, environmentally-friendly printing system. No liquid chemicals are used in the printing process, and no chemical waste is produced after printing. In addition, our thermal blue film does not contain any metal components such as silver. This means that all Sony medical print media can be treated as household waste for disposal and recycling purposes, rather than as industrial waste.



Print Media:

UPC-R80MD



UP-DR80MD

A4 Colour Digital Printer

Suitable for: Endoscopy, Ophthalmology, Ultrasound, Microsurgery, Microscopy, Pathology
Compact and stylish A4 dye-sublimation colour printer with easy to use front operation.

- A4 colour
- USB 2.0 interface
- High resolution Photo quality
- Long term durability of print out thanks to the lamination

Features

- Superior self laminating roll media
- Compact design for trolley applications
- A4 size colour print in approximately 76 seconds
- Advanced grey balance and colour balance adjustment

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



Print Media:

UPC-21S

UPC-21L

UPC-24SA

UPC-24LA



UP-D25MD

A6 Colour Digital Printer

Suitable for: Endoscopy, Microsurgery, Microscopy, Pathology, Ophthalmology, Ultrasound

Compact and lightweight in design, this printer is perfectly designed to be integrated and used in a wide range of medical applications.

- A6 colour
- USB 2.0 interface
- Compact size

Features

- Photo-realistic quality prints with Sony dye sublimation printing technology
- Resolution of 423 dpi for high picture quality
- A6 size colour print in approximately 19 seconds
- Supports both self-laminating UPC-24 SA/LA and non-laminating UPC-21 S/L media
- Advanced grey balance and HSV-colour balance adjustment, including preview window in driver

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



Print Media:

UPC-55



UP-55MD

A5 Colour Video Printer

Suitable for: Endoscopy, Microsurgery, Microscopy, Pathology, Ultrasound

Designed for heavy-duty use, offering superb reliability and durability, this colour video printer is ideal for a host of medical applications.

- Easy image storage of printed images on USB flash memory
- A5 colour
- RGB, Video & S-Video interfaces
- Ultra compact
- Multiple print modes; standard and 2, 4 and 8 split print of different images

Features

- HD television signal support accepting both 1080i and 720p signal types
- Resolution of 379 dpi for photo-quality prints
- A5 size print in approximately 20 seconds
- Compact size and simple front operation

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



Print Media:

UPC-21S

UPC-21L

UPC-24SA

UPC-24LA



UP-25MD

A6 Colour Video Printer

Suitable for: Ultrasound, Endoscopy, Microsurgery, Microscopy, Pathology,

Compact and lightweight in design, this printer is perfectly designed to be integrated and used in a wide range of medical applications.

- A6 colour
- RGB, S-Video & Video interfaces
- Compact size

Features

- HD television signal support accepting both 1080i and 720p signal types
- Photo-realistic quality prints with Sony dye sublimation printing technology
- Resolution of 423 dpi for high picture quality
- A6 size colour print in approximately 19 seconds
- Supports both self-laminating UPC-24 SA/LA and non-laminating UPC-21 S/L media
- RGB and advanced HSV-colour balance adjustment features

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



Black and white printers



Print Media:

UPP-84HG

UPP-84S

UP-D711MD

A7 Black & White Digital Printer

Suitable for: Ultrasound

The Smallest Medical Printer in its class is the ideal solution for all portable medical diagnostic equipment, such as ultrasound systems.

- A7 monochrome
- Extremely compact: 12.5 cm deep
- Low Power consumption
- USB 2.0 interface
- DC input : 12 to 24V

Features

- Photo quality print out with the UPP-84HG high glossy paper
- AC-adaptor available as optional accessory
- Various Print modes
- Paper saving mode

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



Print Media:

UPP-110HG

UPP-110HD

UPP-110S

UP-D897

A6 Black & White Digital Printer

Suitable for: Ultrasound, C-Arm, Dental, Electrophoresis, Echo-endoscopy

The Sony UP-D897 thermal printer is the ideal choice for digital ultrasound systems.

- A6 monochrome
- USB 2.0 interface
- Photo quality print out with UPP-110HG high glossy paper

Features

- High picture quality with high resolution (325 dpi) and excellent gray scale reproduction (8bits/ 256 levels)
- High-speed printing in approximately 2 seconds
- Multiple print modes available for a variety of applications
- Compact and lightweight design

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



Print Media:

UPP-110HG UPP-110HD
UPP-110S



UP-897MD

A6 Black & White Video Printer

Suitable for: Ultrasound, C-Arm, Echo-endoscopy

The UP-897MD black and white video printer is designed specifically for use with medical diagnostic equipment, such as ultrasound systems

- A6 monochrome
- Composite video interface
- Photo quality print out with UPP-110HG high glossy paper

Features

- Compact and lightweight design
- High picture quality with high resolution (325 dpi) and excellent gray scale reproduction (8bits/ 256 levels)
- High speed printing of approx 2 seconds in standard mode
- Selectable 4:3 or 1:1 aspect ratio

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



Print Media:

UPT-735BL UPP-725



UP-D72XR

8x10" Black & White Digital Printer

Suitable for: C-Arm, Dental X-Ray, Ultrasound, Veterinary

The UP-D72XR provides photo-quality output and has been specifically designed for use with X-ray systems, such as mobile C-arm units and dental X-ray systems.

- 8"x10" monochrome
- USB Interface
- Thermal paper and Blue Film

Features

- High resolution of 300 dpi
- Photo-quality prints with Sony direct thermal printing technology
- High-speed printing of approximately 45 seconds
- Precise Gamma-curve-adjustment capability

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A





Print Media:

UPP-210HD UPP-210SE



UP-970AD

A4 Black & White Hybrid Printer

Suitable for: C-Arm, Ultrasound

Integrated by all major C-Arm manufacturers, the UP-970AD combines high image quality with high reliability in a compact and easy-to-use printer.

- A4 monochrome
- Composite video interface and USB 2.0
- Thermal paper only

Features

- High quality and accurate gray scale reproduction with 8 bits/ 256 levels.
- High resolution of 325 dpi
- High-speed printing of 8 seconds
- Multiple print modes; standard, side and 2, 4 and 6-split print of different images

Print Media:

UPP-210SE UPP-210HD
UPT-210BL


UP-990AD

A4 Black & White Hybrid Printer

Suitable for: C-Arm, Dental X-Ray, Ultrasound, Veterinary

The UP-990AD is the smallest printer offering x-ray images on blue film and used by all major C-arm manufacturers.

- A4 monochrome
- Composite video interface and USB 2.0
- Thermal paper and Blue Film

Features

- High quality and accurate gray scale reproduction with 8 bits/ 256 levels.
- High resolution of 325 dpi
- High-speed printing of 8 seconds
- Multiple print modes; standard, side and 2, 4 and 6-split print of different images
- Auto-cut function

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



Radiology Diagnostic Imagers



UP-DF550

UP-DF750

Print Media:

UPT-517BL	UPT-514BL
UPT-512BL	UPT-510BL

Print Media:

UPT-517BL	UPT-514BL
UPT-512BL	UPT-510BL
UPT-M712BL	UPT-M710BL

UP-DF550

Multi-format Diagnostic DICOM Film Imager

Suitable for: Computed Tomography, Magnetic Resonance, CR/DR

Digital Film Imager for all DICOM compliant general radiology applications.

- Multi-format Diagnostic Film Imager
- DICOM interface
- World's smallest footprint in its class

Features

- Support for 14" x 17", 11"x14", 10"x12" and 8"x10" Sony Blue Thermal Film
- High resolution of 320 dpi and 12 bit processing
- High-speed printing at a rate of up to 85 sheets of film per hour (8"x10")
- Vertical installation capability for saving space
- 20 Gamma curves for advanced image quality adjustment
- Quick warm-up time of less than 2 minutes

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



UP-DF750

High resolution Diagnostic DICOM Film Imager

Suitable for: Mammography, CR/DR, Computed Tomography, Magnetic Resonance

The UP-DF750 Digital Film Imager features superior image quality through high resolution and high density printing.

- Suitable for Mammography
- DICOM interface
- World's smallest footprint in its class

Features

- Superior image quality through 604 dpi resolution and 14 bit processing
- Support for 10"x12" and 8"x10" Sony Mammography Blue Film (Dmax=3.8)
- Support for 14"x17", 11"x14", 10"x12" and 8"x10" Sony Blue Thermal Film (Dmax=3.2)
- High-speed imaging at a rate of up to 90 sheets of film per hour (8"x10")
- Fully flexible film trays accept any film size and type
- Large 3.8" graphic display with adjustable orientation
- Vertical installation capability for saving space
- Quick warm-up time of less than 2 minutes
- 40 Gamma curves for ultimate image quality adjustment versatility
- New advanced parameterised magnification types and DICOM configuration utility

Product compliance
EN 60601-1, EN 60601-1-2, UL 60601-1,
CSA C22.2 No. 601.1, FCC / IC Class A



Thermal Print Media

The unique Sony difference

Here's a guide to the unique features that make Sony medical print media significantly superior when used with our medical printers.

The quality of printed images, now and over time, is determined by the performance of the printer itself. But choosing the print media is equally vital to achieve long-term quality and durability of images that's crucial in medical applications.

Selecting the right print media can also ensure trouble-free printing, reducing the risk of sudden problems at a critical moment. Because it's designed to match the mechanical characteristics of our medical printers, Sony print media ensures you can depend on the worry-free delivery of high quality images – today and tomorrow.

High water resistance

Our high-glossy layer prevents smudging from water and fingerprints and increases storage stability.¹



Minimal curling

Enabling hassle-free filing, our print media minimises curling to ensure reliable, smooth throughput.

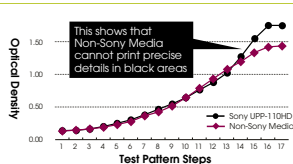


Head-matching performance

Designed to optimally match our printer heads, the top coat layer of Sony print media ensures continuously consistent printing.

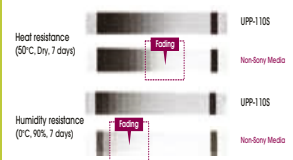
Superior print quality

Our rigorous application of pressure control ensures that the thermal coat layer delivers high-quality colouring properties. The Y curve and Dmax are strictly adjusted to ensure the stable provision of consistent, optimal image quality.



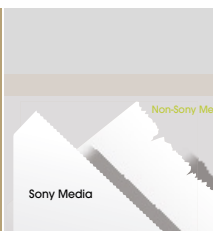
High humidity and heat resistance

High humidity can cause a significant loss of print density. Such degradation is much less marked with Sony print media, which is designed to maintain picture durability.



Advanced tearing properties

The base material of Sony print media uses a dedicated substrate that matches the thermal specifications of our printers, and applies a special process to improve coating properties. This prevents cutting in the machine direction, whilst ensuring excellent cutting properties in the cross direction.



Anti-electrostatic layer

The electrostatic energy that builds up during printing can cause sparking which destroys vital printer components, particularly in the thermal head. Our built-in antistatic layer acts effectively against this build-up.

HIGH GLOSS LAYER

TOP COAT LAYER

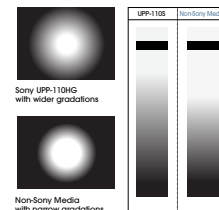
THERMAL COAT LAYER

BASE MATERIAL
(SYNTHETIC PAPER)

BACK COAT LAYER

Excellent Grey scale reproduction

Sony video printers and print media are developed together, ensuring accurately matched grey scale characteristics that help to ensure the best possible image transfer quality.



¹ Applies to UPP-110HG

Print media at a glance

The optimum choice

Size	Description	Comments	Model	Prints per pack or length	Printers			Number of rolls or packs	
Colour printing for reference					UP-D77MD	UP-D75MD	UP-DR80MD	Per subcarton	Per master-carton
A4	Self-laminating Colour Printing Pack		UPC-R80MD	50 x 2			•		4
A4	Self-laminating Colour Printing Pack		UPC-770	72	•	•			5
					UP-55MD/D55				
A5	Colour Printing Pack		UPC-55	100 x 2		•			5
					UP-20/21MD/D23MD	UP-25MD/UP-D25MD			
A6	Self-laminating Colour Printing Pack		UPC-24LA	40 x 4		•			6
A7	Self-laminating Colour Printing Pack		UPC-24SA	60 x 3		•			6
A6	Colour Printing Pack		UPC-21L	50 x 4	•	•			6
A7	Colour Printing Pack		UPC-21S	80 x 3	•	•			6
Black & white printing for reference					UP-D74XRD	UP-D72XR			
8x10"	Blue Thermal Film		UPT-736BL	100	•				5
8x10"	Blue Thermal Film		UPT-735BL	100		•			5
8x10"	Thermal Printing Paper		UPP-725	100	•	•			5
					UP-990AD	UP-970AD			
A4	Thermal Printing Paper	(Type II: High Density)	UPP-210HD	25m	•	•		5	20
A4	Thermal Printing Paper	(Type I: High Quality)	UPP-210SE	25m	•	•		5	20
A4	Blue Thermal Film	(Type III)	UPT-210BL	12.5m	•			5	20
					UP-897 series	UP-895 series	UPP-890 series		
A6	Thermal Printing Paper	(Type V: High Glossy)	UPP-110HG	18m	•	•		10	100
A6	Thermal Printing Paper	(Type IV: Superior Density)	UPP-110HA	18m			•	10	100
A6	Thermal Printing Paper	(Type II: High Density)	UPP-110HD	20m	•	•	•	10	100
A6	Thermal Printing Paper	(Type I: High Quality)	UPP-110S	20m	•	•	•	10	100
					UP-D711MD				
A7	Thermal Printing Paper	(Type HG: High Glossy)	UPP-84HG	12.5 m		•		10	100
A7	Thermal Printing Paper	(Type S: High Quality)	UPP-84S	13.5 m		•		10	100
Black & white printing for diagnosis					UP-DF750	UP-DF550	UP-DF500		
14x17"	Blue Thermal Film	For general Radiology	UPT-517BL	125	•	•	•		4
11x14"	Blue Thermal Film		UPT-514BL	125	•	•			4
10x12"	Blue Thermal Film		UPT-512BL	125	•	•			4
8x10"	Blue Thermal Film		UPT-510BL	125	•	•			4
10x12"	Blue Thermal Mammography Film	For Mammography application	UPT-M712BL	125	•				4
8x10"	Blue Thermal Mammography Film		UPT-M710BL	125	•				4

All print quantity numbers are measured in default setting.
All non-metric weights and measures are approximate.

How to identify genuine Sony Print Media



Sony's print media is developed with patented technologies exclusively alongside Sony's printers, to ensure they complement each other.

When purchasing print media look for the Sony logo in the top left to identify a genuine product.



Solutions – supporting the medical workflow

Hardware and software that supports efficient content management

At Sony Medical, we are able to draw upon Sony expertise across numerous sectors to develop technology that underpins business and organisational efficiency and productivity.

Applying such expertise to hospitals and other medical facilities has enabled us to create hardware and software that support workflows through highly efficient content management.

From our VMI-40MD medical image multiplexer that combines multiple streams of clinical information into a single output for easy sharing and management to intuitive content editing software with Vegas Pro 12.0 content management and delivery system, our solutions give you greater content control.

SONY

CONTROL



VMI-40MD

Medical Image Multiplexer

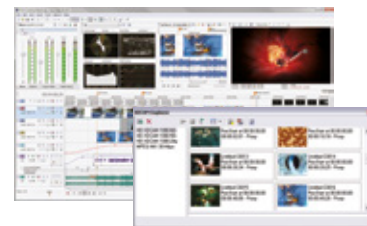
Suitable for: Observation in Operating Rooms, Emergency Rooms, Acute Care, Conference Rooms for Education and Training

Receives up to 4 separate medical images and information from procedure site, displays them in multiple frames on a single screen and transmits to other on-site or remote locations.

- Single-device solution for combining multiple streams of clinical information input into a single image output for easy sharing and management
- Reduces load on hospital networks with transmission over single Ethernet line
- Ideal for connecting to remote specialist facilities

Features

- Multiple layout patterns
- Multi-image composition and RGB output
- Still image capture on USB stick or USB HDD
- One button operation on front menu or foot control switch



Vegas Pro 12

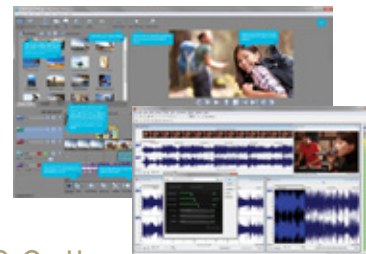
Professional Video, Audio, and Blu-ray Disc™ Creation

The Vegas™ Pro 12 collection is an integrated production environment. Combining a familiar track-based timeline with hundreds of thoughtful workflow innovations, Vegas Pro 12 simplifies the editing process while offering the high-end performance and more creative control.

- Precise editing tools
- Superior audio control with Dolby® Digital Professional Encoder
- Powerful Blu-ray Disc™ authoring

Features

- Device explorer window
- Improved interface and 3D editing functions
- Enhanced window trimmer
- Choice of layout
- Pre-built templates
- 3D capability



Movie Studio 13 Suite

HD video editing, DVD creation, and more.

Movie Studio 13 Suite brings four impressive Sony applications together to produce a complete multimedia experience. The software allows creation of video in beautiful 4K XAVC S or AVCHD™, development of original music, and enhanced multichannel audio.

Features

- Jump Start Tutorials provide a quick overview of the Movie Studio 13 workflow
- Powerful Blu-ray Disc™ authoring
- Sound Forge™ Audio Studio software
- 3D capability





Technology - advanced innovation

Bringing medical imaging innovations to life

As a pioneer with a heritage of visual technology breakthroughs, we continue to champion new solutions that support diagnostic and surgical success.

Having created our leading HD medical workflow range – from image capture, display and recording through editing and storage to distribution and print – we are now bringing OLED and 3D clarity to medical environments.

From the world's first OLED medical monitor to harnessing the clarity of precise perceived depth and spatial orientation with our 3D medical monitors, cameras and recorders, we translate the latest technological innovations into dedicated medical imaging solutions.

OLED technology

Wide dynamic range

Accurate colour reproduction in dark areas of the displayed image

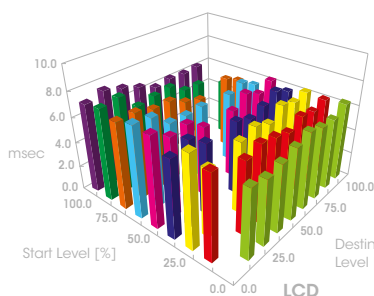
Thanks to TRIMASTER EL technology, Sony OLED monitors are capable of reproducing pure black levels that are faithful to the source signal. They also provide superb colour reproduction, especially for dark images.

This can assist medical professionals with observing subtle details – such as faint colour differences of tissue such as blood vessels, membrane and fat under low-light conditions.

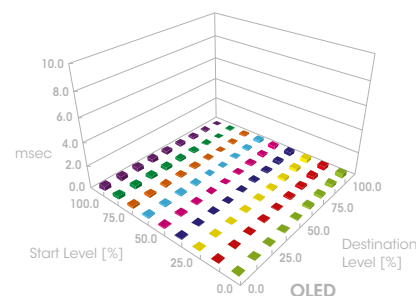
Quick response

Virtually no motion blur

The OLED electroluminescent layer responds almost instantly to changes in electrical current input, achieving superb response performance for blur-free reproduction of fast-moving images. This is beneficial for a variety of critical medical applications, such as rigid endoscopic surgery and flexible endoscope investigation.



LCD screen image



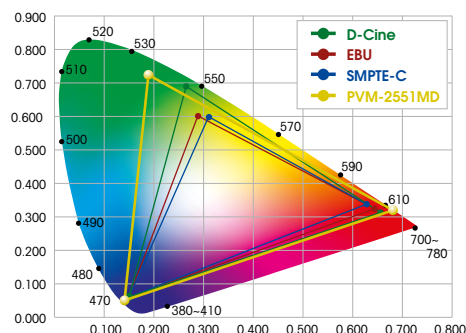
Sony OLED screen image

Wide colour gamut

Reproduces small differences in colour

OLED exceeds the colour range of any previous Sony monitor technology. The advanced micro-cavity structure uses an optical resonance effect in combination with accurate colour filters to calibrate and stabilise RGB colour accuracy.

This combination is also effective in reducing ambient light reflection. Consequently deep colour reproduction can be achieved with virtually no degradation, particularly in bright environments



Sony OLED Technology

PVM-2551MD Medical OLED Monitor

The PVM-2551MD features the newly developed dedicated OLED processor and establishes a new, improved standard of critical-image monitoring. Sony innovative OLED technology delivers deep black, high-contrast, accurate colour reproduction and quick response times with virtually no motion blur.

HMS-3000MT Head Mounted Display

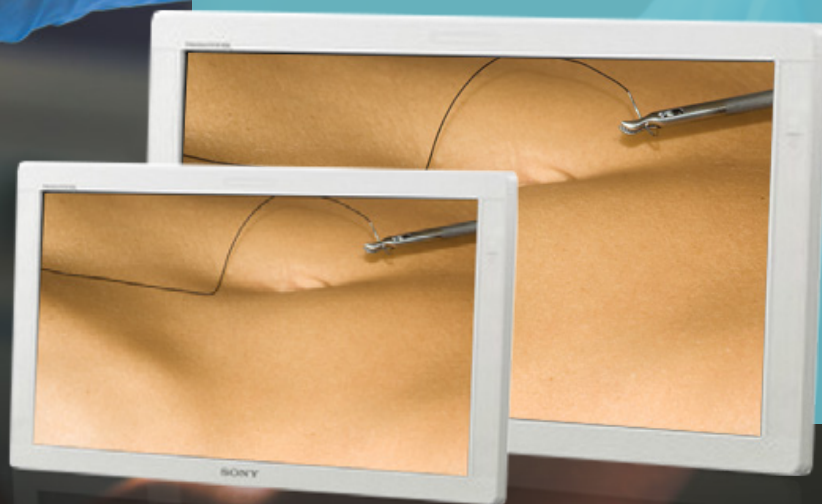
The Sony Head Mounted Display uses OLED panels for detailed image representation of the viewed area. Two 18mm (diagonal) panels positioned inside the monitor, one in front of each eye. Independent HD images are displayed on the left and right panels respectively with no crosstalk.



Case Study

Guy Slater of St Richard's Hospital discusses experience of Sony's OLED medical monitors which enhance laparoscopic surgery

St. Richards Hospital (SRH) in Chichester has taken the next step in the surgical imaging field by introducing Sony's ground-breaking 25" OLED monitor (PVM-2551MD). It's the first solution of its kind in the medical sector that harnesses Sony TRIMASTER EL™ technology to provide the stability of colour imaging and high quality contrast to enhance surgical viewing. Leading surgeon Mr. Guy Slater and his team were the first to pilot trial the displays and have benefited from their superior contrast, virtually non-existent blur and more faithful colour reproduction, relative to LCD.



Application: Laparoscopic surgery

Company: St Richard's Hospital

Country: United Kingdom

Background

St Richard's Hospital is a medium-sized District General Hospital (DGH) located in Chichester, West Sussex, England. SRH has one of the most advanced bariatric surgery departments in the UK that provides specialist surgical weight loss treatment for obese patients. The service was established at St Richard's Hospital in May 2006 and now attracts patients from all over the country who benefit from the specialist care of the hospital's skilled staff.

Challenges

The bariatric division at SRH is the busiest department in the UK, with a high flow of patients. Using monitors and stacks – the hospital does very little conventional open surgery. For that reason, Mr Slater and his department required a technological solution that would enable them to distinguish even the most subtle differences between tissues and blood vessels that can affect an outcome of weight loss surgery.

Solutions

Sony Solution

St Richard's Hospital needed a solution that would empower its surgeons with the highest quality images. Therefore, Sony provided SRH with 4 PVM-2551MD displays which combine full HD resolution (1,920 x 1,080 pixels) with 10-bit signal processing for accurate colour management and unrivalled image quality. OLED monitors are used particularly in both rigid and flexible endoscopy as well as surgical microscopy procedures to allow the surgeon to see subtle tissue differentiation in low light conditions. Sony's OLED monitor provides maximum resolution and ultimate precision in image reproduction.

Commenting on the installation, John Strudwick of Richard Wolf - specialists in endoscopic cameras who work in partnership with Sony Medical, stated: "Sony's OLED technology provides the clearest possible image so surgeons can work quickly and efficiently. As a specialist in endoscopic cameras, I can say with confidence that Sony is head and shoulders above its competition. In combination with our modern HD endoscopy cameras, customers like Mr. Slater can recognise even

the smallest details, such as in screening for early indications of cancer, in detecting flat lesions, or in differentiating tumours seamlessly in a medical environment."

Why Sony Were Selected

SRH required a cutting-edge technological solution that would enable them to operate efficiently, educate their trainees effectively on how to provide the highest quality bariatric care as well as helping them to develop their own operating techniques. Sony provided best of breed technology solution to meet those needs, combined with expert consultancy, which was a major driver behind SRH's investment in OLED.

SRH decided to make the transition from its LCD monitors to Sony's OLED displays as part of an upgrade process for the laparoscopic stacks that they previously used. The hospital was presented with the opportunity of a side-by-side comparison and found Sony's OLED technology provided the clearest possible image to work quickly and efficiently, thus improving the accuracy of surgery.

John Herman, European Trade Marketing Manager – Surgical at Sony Medical, commented: "OLED is definitely the future for surgical imaging. Surgeons need the best picture quality to be able to perform at their highest standard. I have visited many surgeons having performed side by side comparisons with both OLED and LCD monitors. The feedback that we've been given is that OLED is the clear winner."

Results

Commenting on the significant impact the introduction of OLED technology has had, Mr Salter said: "OLED makes surgery easier, more accurate and much less stressful. The benefits for me are three fold: It handles colour better which makes the surgery more accurate.

The speed the image can cope with movement is excellent – you never get blurring as you move the telescope around the abdomen. The ability to work in low light, particularly if you've got bleeding which draws the light away the OLED technology allows me to work more accurately despite sub-optimal conditions."

HD workflow

1. Capture



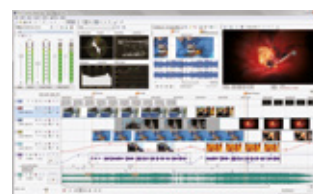
2. Display



3. Record



4. Edit



7. Archive



6. Distribute



5. Print



Capture

You can rely on one of the world leaders in imaging technology for compact cameras that capture intricate detail with HD clarity.

Display

Now both professionals and students can benefit from a clearer picture of surgical procedures with displays that can assist with more accurate differentiation of colours and tissue types.

Record

Compact, versatile recording solutions deliver long-lasting picture

quality, random access capability and enhanced security that incorporates patient data.

Edit

As an expert in networked video and media management through software such as Vegas Pro 12 and Movie Studio 13, Sony delivers complete control of all digital data for more tailored teaching and colleague collaboration.

Print

Sony have led the way in purpose-built medical printing technology for decades, offering superb colour

reproduction and exceptional durability.

Distribution

Share digital still images and HD video across campuses and around the world, with highest image and sound quality for more immersive group teaching and collaboration.

Archive

Store and access massive and continually-increasing volumes of digital medical data with workflow-friendly, cost-efficient, dependable and secure archive solutions.

HD technology

Perception and discrimination

The closer you are to an object, the more detail you see. The human eye can discriminate detail within about 1 minute of arc (MOA). This is equivalent to being able to see 1mm lines from a distance of around 3.5 metres.

Therefore the larger the monitor or viewing screen, or the nearer you sit to it, the more detail you can resolve. The ideal size of screen or viewing distance is when the screen's line structure is just imperceptible. If you sit any nearer, or the screen is any larger, the image begins to break

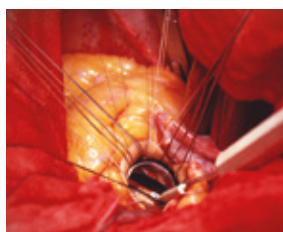
up individual pixels become visible. Too far away, or too small a screen and you cannot see all the image's available detail.

This is why Sony's HD line-up is so important to medical practitioners: when it comes to a patient's health, no detail is too small.

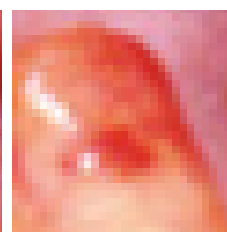
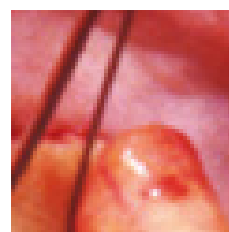
Pixels and resolution

SD pixels and resolution

The resolution of 625 line SD television (PAL) is 720 x 576 pixels, or 414,720 pixels in total (shown right). This is shown as a 4:3 image. PAL pixels are therefore not square but slightly tall.



Standard Definition (PAL 720x576)

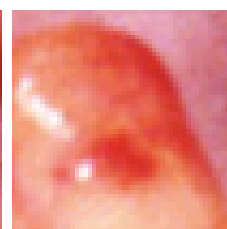


HD pixels and resolution

The resolution of 1080 HD is 1,920 x 1,080 pixels, or 2,073,600 pixels in total (shown right). The resolution of 720 HD is 1280 x 720 pixels, or 921,600 pixels. Both 1080 HD and 720 HD are a true 16:9 image with square pixels.



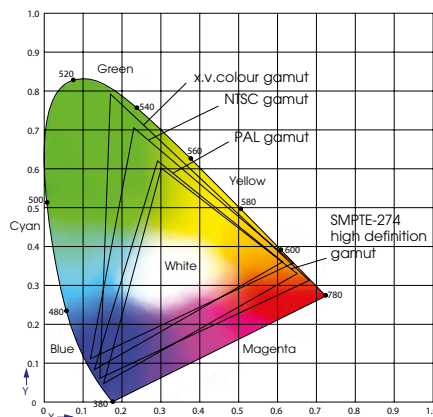
High Definition (PAL 720x576)



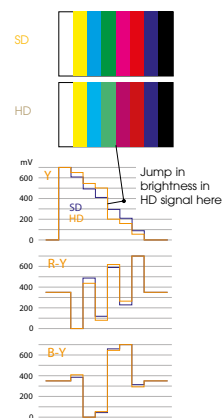
Comparing PAL with 1080 HD. In comparison both images are made the same height.

HD and colour

HD television offers a new colour space with a redefined. For professionals, there is a jump in brightness in the colour bars standard test signal between green and magenta. The new standard also extends this gamut even further for selected HD equipment.



Colour Bars



3D technology

Surgical certainty

Everyone knows the closer you are to something, the more detail you see. The human eye can discriminate detail within about 1 minute of arc (MOA). This is the equivalent to being able to see 1mm lines from about 3½ metres away.

Therefore the larger the monitor or viewing screen, or the nearer you

sit to it, the more detail you see. The ideal size of screen or viewing distance, is when the screen's line structure is just imperceptible. If you sit any nearer or the screen is any larger, the image begins to break up as you see the individual pixels. Too far away, or too small a screen, and you cannot see all the image's available detail. This is why our HD

line-up is so important to medical practitioners: when it comes to a patient's health, no detail is too small.



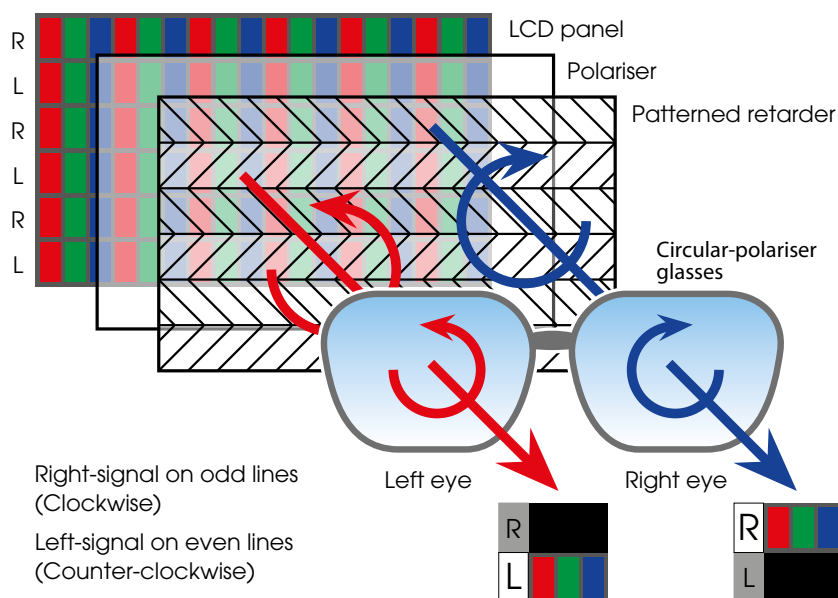
BKM-30GM 3D glasses

Delivering clear 3D Images for precise perceived depth and spatial orientation

With the aid of lightweight, easy-to-wear 3D polarisation glasses, users can also view several monitors seamlessly and without interruption.

To provide a three-dimensional image during surgery or for transmission for educational or in-service training purposes, users can attach the Sony MCC-3000MT camera with two camera heads to an operating microscope and show the images on compatible Sony 3D monitors, such as the LMD-3251MT or HMS-3000MT.

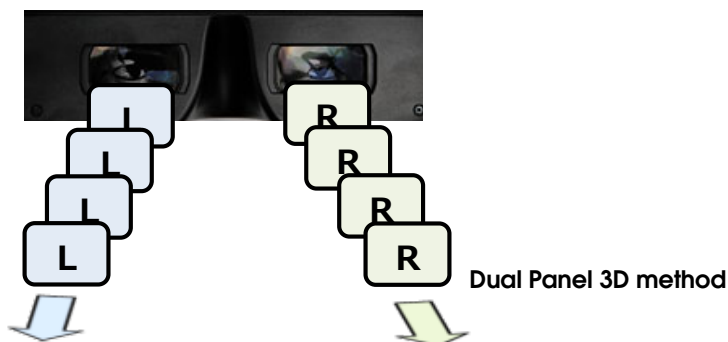
To complete the 3D workflow, the Sony HVO-3000MT 3D HD recorder can record outstanding 3D videos and stills.



Principle of 3D Circular-polariser

Principle of Full Frame 3D

HMM-3000MT adopts the 'Dual Panel 3D Method' which uses independent panels to display dedicated 3D images for the left and right eyes. HMM-3000MT delivers brighter, more natural and pure 3D images in HD (high definition) compared with other 3D methods without cross-talk phenomenon (image ghosting) and without losing resolution and brightness unlike other 3D methods.

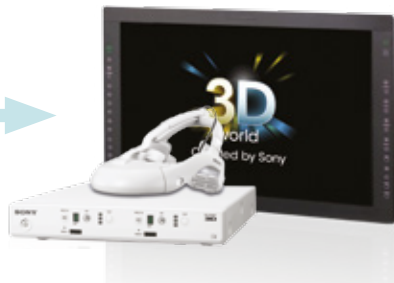


3D workflow

1. Capture



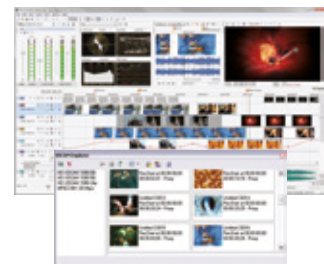
2. Display



3. Record



4. Edit



5. Preview



6. Playback



7. Present



The Sony 3D workflow helps surgeons and other medical staff benefit from a truer visual experience that's closer to natural sight than 2D imaging.

Capture

For microscopic surgery applications, for example, the MCC-3000MT is the first 3D medical-grade Full HD video camera with twin camera heads and a single camera control unit (CCU). Combining ease of adjustment with high precision and high resolution, this 3D video camera attaches to the operating microscope to deliver precise imaging in all three dimensions – recording the same view that the surgeon sees through the microscope.

Display

3D stereoscopic images can be shared with other medical staff via a 3D medical-grade monitor such as the LMD-2451MT. Surgeons benefit from a smooth, uninterrupted view of multiple monitors whilst wearing light, comfortable polarised glasses.

Record

3D images can also be recorded using the HVO-3000MT 3D medical-grade HD video recorder. Providing exceptional picture quality for both 3D and 2D video recording and playback, it records high-quality images onto the internal hard disk drive and a variety of removable media.

Edit and present

Sony's 3D workflow extends from recording to editing with Sony Vegas Pro software and multi-viewer presentation, with Full HD 3D projectors such as the VPL-HW50ES. With Sony, surgeons can enhance communication with patients and fellow clinicians by integrating 3D images into every phase of their workflow.

Accessories

RM-C950

Remote Control Unit



DXC-990P
DXC-C33P

DXC-390P

CMA-D2MD

Camera Adaptor



DXC-990P
DXC-390P

CMA-D3CE

Camera Adaptor



DXC-990P
DXC-390P

Cables

Model	Length	In	Out	DXC-390P DXC-990P	DXC-C33P	PMW-10MD	MCC-500MD	MDD Approved
CCDC-	5/10/25/ 50A/100A	12-pin	4-pin DC Cable	•				•
CCMC-20P	5/10/30	20-pin	20-pin		•			•
CCMC-T	50/10/15/20	20-pin	36-pin			•		•
CCXC-12P	5/10/25	12-pin	12-pin multicore	•				•
CCZ-A	5/10/25/50/100	26-pin	26-pin	•				
CCMC-3MZ	3	26-Pin	12-Pin, 9-Pin D-Sub, 8-Pin Mini DIN and BNC	•				
CCMC-9DS	5	9-pin	4BNC, DIN 4-pin	•	•			•
CCMC-9DB	5	9-pin	5BNC		•			
CCXC-9DBS	5	9-pin	4BNC, DIN 4-pin	•				•
CCMC-SA	06/10/15	20-pin	20-pin				•	•
CCMC-EA05	5	20-pin	20-pin				•	•

MCC-500MD

HD Medical Video Camera



HVO-1000MD
LMD-2451MD

RM-91

Remote Control Unit

Connector: Stereo mini
Cable length: 5 m
Mass: 80 g (3 oz)
Supplied accessory:
Operation manual

Remote Commander	
UP-20	UP-21MD
UP-55MD	UP-897MD
UP-990AD	UP-970AD

FS-24

Foot Switch

Connector:
Stereo Mini Jack
Cable Length: 5 m
Water proofing: IPX3

Remote Commander	
UP-20	UP-21MD
UP-55MD	UP-897MD
UP-990AD	UP-970AD

BKM-220D

SDI 4:2:2 Input Adaptor



LMD-1951MD
LMD-2451MT

LMD-2451MD
PVM-2551MD

BKM-227W

Composite and S-Video (Y/C) Input
Adaptor



LMD-1951MD
LMD-2451MT

LMD-2451MD
PVM-2551MD

BKM-229X
Analogue Component Input Adaptor



V MDD
Approved

LMD-1951MD	LMD-2451MD
LMD-2451MT	PVM-2551MD

BKM-243HSM
HD SDI&SDI Input Adaptor



V MDD
Approved

LMD-1951MD	LMD-2451MD
LMD-2451MT	PVM-2551MD
LMD-3251MT	

BKM-256DD
DVI Input Expansion Board



V MDD
Approved

LMD-1951MD	LMD-2451MD
LMD-2451MT	PVM-2551MD
LMD-3251MT	

BKM-250TGM
3G/HD/SD-SDI Input Adaptor



V MDD
Approved

LMD-1951MD	LMD-2451MD
LMD-2451MT	LMD-4251TD
PVM-2551MD	LMD-3251MT

BKM-341HS/M
HD-SDI Adaptor



V MDD
Approved

LMD-2110MD	LMD-1530MD
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SU-560
Display Stand



V MDD
Approved

LMD-1951MD	PVM-2551MD
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SU-32FW
Display Stand



V MDD
Approved

LMD-3251MT	
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AC-110MD
AC Adaptor for LMD Monitors



V MDD
Approved

LMD-1951MD	LMD-2451MD
PVM-2551MD	LMD-2451MT
LMD-3251MT	

AC-80MD
AC Adaptor for Printer and 3D camera



V MDD
Approved

LMD-1951MD	LMD-2451MD
UP-D711MD	MCC-3000MT

BKM-30GM
Circular-polariser 3D Glasses



V MDD
Approved

LMD-2451MT	LMD-4251TD
LMD-3251MT	

BKM-31GM
Clip-on Type Circular-polariser 3D Glasses



V MDD
Approved

LMD-2451MT	LMD-4251TD
LMD-3251MT	

HMM-3000MT
3D Head Mounted Display System



V MDD
Approved

HMM-3000MT	
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Black & white media for reference

UPT-736BL

Blue Thermal Film

Contents:
100 sheets Paper size:
203 x 254mm
(8 x 10 inches)



Size: 8 x 10

UP-D74XRD

UPT-735BL

Blue Thermal Film

Contents:
100 sheets
Paper size:
203 x 254mm
(8 x 10 inches)



Size: 8 x 10

UP-D72XR

UPP-725

Thermal Printing Paper

Contents:
100 sheets of print media
Paper size:
203 x 254mm
(8 x 10 inches)



Size: 8 x 10

UP-D74XRD

UP-D72XR

UPP-210HD

Thermal Print Media
(Type II: High Density)

Paper size:
210mm (W) x 25 m
Print quantity:
139 prints



Size: A4

UP-990AD

UP-970AD

UPP-210SE

Thermal Print Media
(Type I: High Quality)

Paper size:
210mm (W) x 25 m
Print quantity:
139 prints



Size: A4

UP-990AD

UP-970AD

UPT-210BL

Blue Thermal Transparent Film (Type III)

Paper size:
210mm (W) x 12.5 m
Print quantity:
42 prints (6-split)



Size: A4

UP-990AD

UPP-110HG

Thermal Print Media
(Type V: High Glossy)

Paper size:
110mm (W) x 18 m
Print quantity:
193 prints



Size: A6

UP-897MD

UP-D897

UPP-110HD

Thermal Print Media
(Type II: High Density)

Paper size:
110mm (W) x 20 m
Print quantity:
215 prints



Size: A6

UP-897MD

UP-D897

UPP-110S

Thermal Print Media
(Type I: High Quality)

Paper size:
110mm (W) x 20 m
Print quantity:
215 prints



Size: A6

UP-897MD

UP-D897

UPP-84HG

Thermal Print Media
(Type HG: High Glossy)

Paper size:
84 mm (W) x 12;
Print quantity:
173 prints



Size: A7

UP-D711MD

UPP-84S

Thermal Print Media
(Type S: High Quality)

Paper size:
84 mm (W) x 13.5m
Print quantity:
187 prints



Size: A7

UP-D711MD




All products on this page are MDD approved.

Thermal film for diagnosis

UPT-517BL

Blue Thermal Film

Contents:
125 sheets
Paper size:
354 x 430mm
(14 x 17 inches)




Size: 14 x 17	UP-DF500
UP-DF750	UP-DF550

UPT-514BL

Blue Thermal Film

Contents:
125 sheets
Paper size:
279 x 354mm
(11 x 14 inches)



Size: 11 x 14	UP-DF500
UP-DF750	UP-DF550

UPT-512BL

Blue Thermal Film

Contents:
125 sheets
Paper size:
253 x 304mm
(10 x 12 inches)




Size: 10 x 12	UP-DF500
UP-DF750	UP-DF550

UPT-510BL

Blue Thermal Film

Contents:
125 sheets
Paper size:
202 x 253mm
(8 x 10 inches)




Size: 8 x 10	UP-DF500
UP-DF750	UP-DF550

UPT-M712BL

Blue Thermal Mammography Film

Contents:
125 sheets
Paper size:
253 x 304mm
(10 x 12 inches)




Size: 10 x 12	UP-DF500
UP-DF750	

UPT-M710BL

Blue Thermal Mammography Film

Contents:
125 sheets
Paper size:
202 x 253mm
(8 x 10 inches)



Size: 8 x 10	UP-DF500
UP-DF750	

Colour media for reference

UPC-770

Self-laminating Colour Printing Pack

Contents:
72 sheets of print paper
a roll of ink ribbon
Paper size:
210 x 298mm
(8 3/8 x 11 3/4 inches)



Size: A4	UP-D75MD
UP-D77MD	UP-D75MD

UPC-R80MD

Self-laminating Colour Printing Pack

Contents:
2x 50 sheet print paper roll for 100 prints
2x ink ribbon
Paper size:
210mm (W) x 16m



Size: A4	UP-DR80MD
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UPC-55

Colour Printing Pack

2x 100 sheets of paper
2x ink ribbon
Paper size:
178mmx152mm




Size: A5	UP-D55
UP-D55	UP-55MD

UPC-21L

Colour Printing Pack

Contents:
200 sheets of print paper
4 rolls of ink ribbon
Paper size:
144 x 100mm
(5 3/4 x 4 inches)




Size: A6	UP-20
UP-20	UP-21MD
UP-25MD	UP-D25MD
UP-D23MD	

UPC-21S

Colour Printing Pack

Contents:
240 sheets of print paper
3 rolls of ink ribbon
Paper size:
100 x 90mm
(4 x 3 5/8 inches)




Size: A6	UP-20
UP-20	UP-21MD
UP-25MD	UP-D25MD
UP-D23MD	

UPC-24LA

Self-laminated Colour Printing Pack

Contents (large size):
160 sheets of print paper
(40 sheets x 4 packs)
4 rolls of ink ribbon




Size: A6	UP-25MD
UP-25MD	UP-D25MD

UPC-24SA

Self-laminated Colour Printing Pack

Contents (small size):
180 sheets of print paper
(60 sheets x 3 packs)
3 rolls of ink ribbon




Size: A6	UP-25MD
UP-25MD	UP-D25MD

UPA-500

Cleaning Kit

Contents:
Cleaning roller x 5
Cleaning paper x 5
Head lapping film x 1









Cleaning Kit	UP-DF550
UP-DF750	UP-DF550
UP-DF500	









All products on this page are MDD approved.

Specifications

Full HD Colour Video Cameras			
	MCC-3000MT	PMW-10MD	MCC-5000MD
			
System			
Image device	3-chip 1/2 inch Exmor CMOS (x2)	3-chip 1/2 inch Exmor CMOS	1/2.9 type ""Exmor"" CMOS image sensor, single chip type
Effective picture elements	1920 x 1080		
Scanning system	1080i50/59.94		1080i50/59.94/P50/P60
Sync system	External with BNC (x1)		
Horizontal resolution	1000 TV lines		900TV lines or more
Lens mount	C-mount (x2)	C-mount	
Flange back	17.526mm		
Sensitivity	F10 typical (in 1920 x 1080/59.94i mode)		F5.6 (Typical) (At 1080/59.94i)
Minimum illumination	9 lx (in 1920 x 1080/59.94i mode, F2.2, +21 dB gain)	0.14 lx (in 1920 x 1080/59.94i mode, F2.2, +21 dB gain, with 64-frame slow shutter)	
S/N ratio	54 dB (Y) (typical)		
Gain	0 to 21 dB		55dB (Y) (typical)
Shutter speed	60i: 1/60, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/20000 50i: 1/60, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/16000		1/60 to 1/10000
Electronic shutter	Off/speed/ECS/SL/EXSL		Auto/manual (semi/full)
Iris	Manual		
AE area	Multi/Large/Medium/Spot/Slit Selectable		
AE speed	-99 to +99		
AE detect	Backlight, Standard, Spotlight		Slow/Normal/Fast
Knee point	Auto, Point, Slope, Manual		
Black stretch	Variable Black max / Black min		
Gamma	Variable		Normal/medium/dynamic range
Pedestal	Master, R/B Manual		
Black balance	-99 to +99		
White balance	Preset/Memory/ATW		Auto/Xenon/Halogen/White Led
ATW area	Normal/manual selectable		
ATW speed	1 (slow) - 5 (fast) selectable		
Detail level	-99 to +99		
Detail frequency	-99 to +99		
Linear matrix mode	ALL/Target/OFF/Select		
Partial enhance	-99 to +99, Type1-Type4		
CCD integration mode	G-B, B-G, G-R, R-G, R-B, B-R		
Baud rate	Manual		
Sync	Up to 38400		
Trigger	CMOS/ Open Collector ext Sync BNC		
Strobe	Slave		
Scene file	Profile 1 - Profile 6 (selectable)		
Output signals	HD-SDI, Composite	HD-SDI, Composite, S-Video (Y/C), Y,Pb,Pr, DVI-D	HDMI, HD-SDI, S-Video (Y/C), Composite
Serial data	RS-232C		
Connectors (on Camera Control Side)	Composite output BNC (x1), HD-SDI output BNC for A and B (2x), Ext Sync input BNC (x1), Remote D-sub 9-pin (x1)	Camera input: 36-pin (x1), MIC input: Stereo mini-jack (x1), Composite output: BNC (x1), S-Video output: mini DIN 4-pin (x1) Component output: D-Sub 15-pin (x 1), DVI-D output: DVI connector 19-pin (x1), HD SDI output: BNC (x 2), EXT SYNC input: BNC (x1), FS,TRIG IO: Stereo mini-jack (x1), Remote: D-sub 9-pin (x1)	HDMI (x1), HD-SDI output on BNC (x1), S-Video output: mini DIN 4-pin (x1), Composite output BNC (x1), 3D SYNC on BNC (x2) Input: FS TRIG IO: Stereo mini-jack (x2) Remote:D-sub 9-pin (x1)
Measurements			
Dimensions	CHU : 35 x 45 x 50 mm (1 7/16 x 13/16 x 2 inches) without projection CCU : 200 x 88 x 341mm (7 7/8 x 3 1/2 x 13 1/2 inches) without projection	CHU : 35 x 45 x 50mm (1 7/16 x 1 13/16 x 2 inches) without projection CCU : 200 x 88 x 240mm (7 7/8 x 3 1/2 x 9 1/2 inches) without projection	CHU:27 x 28 x 49 mm (1 1/8 x 1 1/8 x 1 15/16 inches) CCU:200 x 62 x 240mm (7 7/8 x 2 1/2 x 9 1/2 inches)
Mass	CHU : 90 g (3.2 oz) (x2) CCU : 4.5 kg (9 lb 15 oz)	CHU : Approx. 90 g (3.2 oz) CCU : Approx. 2.8 kg (6 lb 3 oz)	camera head: approx. 40 g/approx. 1.4 oz camera camera control unit: approx. 2.3 kg/ approx. 5 lb. 1.1 oz
Power			
Requirements	DC 24 V	AC 100 to 240 V, 50/60 Hz	100 to 240V AC, 50/60Hz
Consumption	1.5 A (inrush: 3.0 A)	0.6-0.36 A	AC 100 to 240V, 50/60Hz
Operating conditions			
Temperature	0 to +40 °C (+32 to +104 °F)		
Storage/Transporting conditions			
Temperature	-20°C to 60°C (-4°F to 140°F)		



SD Colour Video Cameras			
	DXC-C33P	DXC-390P	DXC-990P
			
System			
Image device	3 CCD 1/3 inch EXWAVE HAD Sensor	3 CCD 1/3 inch EXWAVE HAD Sensor	3 CCD 1/2 inch EXWAVE HAD Sensor
Effective picture elements	752 (H) x 582 (V)		
Sensing area	4.8 (H) x 3.6 (V)mm	4.8 (H) x 3.6 (V)mm	6.4 (H) x 4.8 (V)mm
Scanning system	2:1 interlaced, 625 TV lines		
Horizontal frequency	15.625 kHz		
Vertical frequency	50Hz		
Sync system	Internal or external with VBS, HD/VD		
Phase control	H/SC phase control		
Horizontal resolution	850 TV lines		
Lens mount	C mount		Bayonet mount
Flange back	17.526mm		38.00mm
Sensitivity	F8.0 at 2000 lx		F11 at 2000 lx
Minimum illumination	4 lx (F2, GAIN: HYPER)		1 lx (F1.4, GAIN: HYPER)
S/N ratio	61dB		62 dB
Gain	STEP/AGC/HYPER selectable, STEP: 0 to 24 dB by 1 dB step, AGC: 0 to 24 dB (Limit value: 6 dB, 12 dB, 18 dB, 24 dB selectable), HYPER: 30 dB		
Shutter speed	8.0 to 1/100,000 s		0.5 to 1/100,000 s
Electronic shutter	OFF/STEP/VARIABLE/CCD IRIS/KNOB selectable		
Iris	Manual	Auto/Manual	
AE area	Multi/Large/Medium/Spot/Slit/Manual selectable		
AE speed	Fast/Mid/Slow selectable		
AE detect	Average/Peak selectable		
Contrast effect	Manual/DynaLatitude/DCC+ selectable		
Knee point	High/Mid/Low/Off selectable (Contrast: Manual)		
Black stretch	Variable (Contrast Effect: Manual)		
Gamma	On/Off (Variable at ON)		
Pedestal	Master and R/B Manual adjustable		
Black balance	ABB		
White balance	AWB/ATW normal/ATW wide/Manual/3200 K/5600 K selectable AWB or ATW R/B paint, manual R/G gain		
ATW area	Normal/Manual selectable		
ATW speed	Fast/Mid/Slow selectable		
Detail level	All/Target/Off (Variable at All or Target)		
Detail frequency	High/Mid/Low selectable		
Linear matrix	All/Target/Off (Variable at All or Target)		
Linear matrix mode	Standard/R Enhance/G Enhance/B Enhance/Manual selectable		
Partial enhance	All/In/Out selectable		
CCD integration mode	Field/Frame selectable		
Shading compensation	Off/On (Manual control)		
Baud rate	19200/9600/4800/2400/1200 selectable		
Sync	RGB/G/Off selectable		
Trigger	On (Positive edge trigger/Negative edge trigger)/Off		
Strobe	Slave		
User file	A/B switchable		
Scene file	Standard/Microscope/Full Auto/Strobe/File A or B		
Output signals	VBS, RGB/SYNC, Y/C, i.LINK(DV)	VBS, RGB/SYNC, Y/C	
Serial data	RS-232C		
Connectors	DV OUT (6-pin jack), RGB/SYNC (9-pin D-sub) VIDEO OUT (BNC), S-VIDEO (4-pin mini DIN), FS/TRIG IN (Stereo Mini jack), REMOTE (8-pin mini DIN), AC Inlet, Camera (20-pin), EXT SYNC IN (BNC)	RGB/SYNC (9-pin D-sub), DC IN/VBS (12-pin), VIDEO OUT (BNC), TRIGGER IN (BNC), REMOTE (8-pin mini DIN), LENS (6-pin)	RGB/SYNC (9-pin D-sub), DC IN/VBS (12-pin), VIDEO OUT (BNC), TRIGGER IN (BNC), REMOTE (8-pin mini DIN), GEN LOCK IN (BNC) LENS (6-pin)
Measurements			
Dimensions	CHU: 32 x 38 x 40mm (1 5/16 x 1 1/2 x 1 5/8 inches) CCU: 200 x 88 x 242mm (7 7/8 x 3 1/2 x 9 5/8 inches)	56 x 50 x 128mm (2 1/4 x 2 x 5 1/8 inches)	70 x 72 x 123.5mm (2 7/8 x 2 7/8 x 4 7/8 inches)
Mass	CHU: 48 g (1.7 oz) CCU: 2.5 kg (5 lb 8 oz)	Approx. 370 g (13 oz)	Approx. 630 g (1 lb 6 oz)
Power			
Requirements	AC 100 to 240 V, 50/60 Hz	DC 10.5 to 15.0 V	
Consumption	Max. 18 W	Approx. 7.6 W	
Operating conditions			
Temperature	-5 to 45°C (23 to 113°F)		
Storage/Transporting conditions			
Temperature	-20 to 60°C (-4 to 140°F)		

	3D HD Video Recorder		HD Video Recorder	
	HVO-3000MT		HVO-1000MD	
				
Recording devices				
Internal hard disk drive	500 GB		320 GB	
Blu-ray Disc/DVD drive (1)	Compatible media: BD-RE (single or dual layer), BD-R(single or dual layer), DVD-R (single layer)			
Input connectors				
S-Video in	Mini DIN 4-pin type (x1) Y: 1.0 Vp-p (75 Ω) Sync negative C (BURST): 0.286 Vp-p (75 Ω) (NTSC) C (BURST): 0.3 Vp-p (75 Ω) (PAL)			
Video in	BNC (x1), Composite 1.0 Vp-p (75 Ω), Sync negative			
DVI-D in	DVI-D (x2), TMDS 1 channel (single link)		DVI-D (x1), TMDS 1 channel (single link)	
RGB in	D-sub 15-pin (x1), 0.7 vp-p/with synce on green G: 1.0 Vp-p 75 Ω			
HD-SDI in	SD: SMPTE259M HD: SMPTE292M			
3G	3G: SMPTE424M compliant (75 Ω)			
BNC (x2)	BNC (x2)		BNC (x1)	
Audio line in	Stereo mini jack (x1), 1.4 Vrms (full bit), input impedance, 10 k Ω or higher, unbalanced			
Output connectors				
S-Video out	Mini DIN 4-pin type (x1) FS-24 Y:1.0Vp-p(75Ohm)Sync negative, C(Burst): 0.286Vp-p(75Ohm)/NTSC, 0.3Vp-p(75Ohm)/PAL)			
Video out	BNC (x1) SD/HD/3G 0.8 Vp-p 75 Ω		BNC (x1) SD/HD 0.8 Vp-p 75 Ω	
DVI-D out	(x1), TMDS 1 channel (single link)			
HD-SDI out	BNC (x1), SD/HD 0.8 Vp-p 75 Ω			
Audio out	Stereo mini jack (x1), 1.4 Vrms (full bit), load impedance 10 k Ω, unbalanced			
Other interfaces				
USB	USB 2.0 (x4)			
Network	RJ-45 (x1), 1000Base-T/100Base-TX			
Remote RS 232C	D-sub 9-pin (x2)			
Remote contact switch	Stereo mini jack (x4)			
Remote monitor	RJ-45 type (x1)			
Menu monitor	D-sub 9-pin (1x)			
Other				
Supplied accessories	Before Using this Unit (x1), CD-ROM (Instructions For Use, PROTOCOL MANUAL) (x1), Warranty booklet (x1), Infrared remote control unit (x1)			
General				
Power requirements	100V to 240V AC, 50 Hz/60 Hz			
Input current	1.9 A to 0.8 A			
Operating temperature	5 to 40° C (41 to 104° F)			
Operating humidity	20% to 80% 30° C (86° F) (no condensation)			
Operating pressure	700 hPa to 1,040 hPa			
Temperature range for storage	-20° C to +60° C (-4° F to +140° F)			
Humidity range for storage	20% to 90% 30° C (86° F)			
Storage and transport pressure	700 hPa to 1,040 hPa			
Mass	8.4kg (18.5lb.)			
Dimensions	305 x 410 x 115.5mm (12 1/8 x 16 1/4 x 4 5/8 in.) including protrusions			

	HD Video Recorder			
	HVO-500MD	HVO-500MD/ FHD	HVO-550MD	HVO-550MD / FHD
				
Recording Features				
Recording Video Format	MPEG-4 AVC/H.264			
Recording Audio Format	AC-3/AAC LC			
Recording File Format	AC-3/AAC LC			
Recording Media	Internal HDD (500GB), External USB Storage, Network (CIFS)		Internal HDD (500GB), DVD-R, External USB Storage, Network (CIFS)	
Recording Resolution	1280 × 720/59.94p, 1280 × 720/50p, 720 × 480/59.94i, 720 × 576/50i	1920x1080/59.94i, 1920x1080/50i, 1280 × 720/59.94p, 1280 × 720/50p, 720 × 480/59.94i, 720 × 576/50i	1280 × 720/59.94p, 1280 × 720/50p, 720 × 480/59.94i, 720 × 576/50i	1920x1080/59.94i, 1920x1080/50i, 1280 × 720/59.94p, 1280 × 720/50p, 720 × 480/59.94i, 720 × 576/50i
Recording Bit Rate	14Mbps (Best), 8Mbps (High), 4Mbps (Standard)			
Recording Bit Rate	(SD) 5Mbps (Best), 3Mbps (High), 2Mbps (Standard)			
3D Recording	N/A			
Connectors				
Input Connectors	HDMI (Type A) (1), DVI-D (DVI 19-pin) (1), S VIDEO (Mini DIN 4-pin type) (1), VIDEO (BNC type) (1)			
AUDIO	(Stereo mini jack) (1), also via HDMI			
DC IN	(DIN 3-pin)			
Output Connectors	HDMI (Type A) (1), DVI-D (DVI 19-pin) (1), S VIDEO (Mini DIN 4-pin type) (1), VIDEO (BNC type) (1)			
AUDIO	(Stereo mini jack) (1), also via HDMI			
Other Interfaces	"USB (Type A) (3), USB (Type B) (1), Network (RJ-45, 1000 Base-T/100 Base-TX) (1)), REMOTE RS-232C (D-sub 9-pin) (1), REMOTE contact switch (stereo mini jack) (2) REMOTE MONITOR (RJ-45) (1), Equipotential"			
General				
Power Requirements	+12 V to +24 V DC (supply from AC-80MD AC adaptor)			
Input current	3.2 A to 1.6 A		3.5 A to 1.8 A	
Operating Temperature	5°C to 40°C (41°F to 104°F)			
Operating Humidity	20% to 80% (Maximum wet-bulb temperature: 30°C (86°F)) (no condensation)			
Operating Pressure 700 hPa to 1060 hPa	700 hPa to 1060 hPa			
Storage and transport temperature	-20°C to +60°C (-4°F to +140°F)			
Storage and transport humidity	20% to 90% (Maximum wet-bulb temperature: 30°C (86°F)) (no condensation)			
Storage and transport pressure	700 hPa to 1060 hPa			
Mass	2.9 kg (6 lb. 6.3 oz.)		3.2 kg (7 lb. 0.88 oz.)	
Dimensions (including longest protrusions)	212.0 × 287.7 × 105.5 mm (8 3/8 × 11 3/8 × 4 1/4 in.)			
Supplied Items	"Before Using This Unit (1), CD-ROM (Instructions for Use, PROTOCOL MANUAL) (1), Warranty booklet (1), AC-80MD AC adapter (1), AC-80MD Instructions for Use (1), Service Contact List (1)"			

The HVO-500MD/FHD and HVO-550MD/FHD models are the same product as HVO-500MD and HVO-550MD respectively, but are upgraded versions to record in full HD.

	LCD Monitor		
	LMD-1530MD	LMD-1951MD	LMD-2110MD
			
Panel			
LCD Panel Type	α-Si TFT Active Matrix LCD with anti reflection (AR) coated protection panel		α-Si TFT Active Matrix LCD
Resolution	1280 x 768 pixels (WXGA)	1280 x 1024 pixels (SXGA)	1920 x 1080 pixels (Full HD)
Effective picture size (WxH)	334 x 200mm (13 1/4 x 7 7/8 inches)	376 x 301mm (14 7/8 x 11 7/8 inches)	477 x 268mm (18 7/9 x 10 5/9 inches)
Diagonal	390mm (15 3/8 inches)	481.84mm (19 inches)	547mm (21 5/9 inches)
Aspect	15:9	5:4	16:9
Viewing Angle	176°	178°	170/160°, Typical.
Input			
RGB Component	BNC (x3) RGB: 0.7Vp-p +- 3dB (Sync on Green, 0.3Vp-p sync negative) Component: 0.7Vp-p (75% chrominance standard colour bar signal)		
External Sync	BNC (x1)		
Y/C	4-pinMini DIN x 1 Y:1.0Vp-p +-3dB sync negative C: 0.268Vp-p +- 3dB (NTSC burst signal level), 0.3Vp-p +-3dB (PAL burst signal level) (Line A)		
Composite	BNC (x1) 1.0Vp-p +-3dB, sync negative (NTSC/PAL) (Line A)		
SD/HD - SDI	Yes, with adaptor	Yes (x2 with optional board)	Yes, with adaptor
Audio	Phono jack (x1) -5dBu >47KOhms		Phono jack (x1) -5dBu >47KOhms
Computer input			
Analogue HD-15		D-sub 15-pin (x1), R/G/B: 0.7 Vp-p sync positive (Sync On Green, 0.3 Vp-p sync negative) Sync: TTL level (polarity free, H/V separate sync)	
HDMI	HDMI input		HDMI input
Output			
RGB Component	BNC (x3) loop through with 75Ohms automatic terminal function		
Y/C	4-pinMiniDIN (x1) loop through with 75 Ohms automatic terminal function		
Composite	BNC (x1) loop through with 75 Ohms automatic terminal function		
Audio	built-in speaker 0.5W (x1 Mono), phono jack (x1) loop through with 75Ohms terminal function		built-in speaker 0.5W (x1 Mono), phono jack (x1) loop through with 75Ohms terminal function
Computer Output			
DVI-D		TMDS single link (x1)	
Other			
Remote	Parallel 8pin modular	Parallel 8pin modular Serial RS-232C 9-pinD-sub RJ-45 modular connector (ETHERNET)	Parallel 8pin modular
Stand	Supplied 100 x 100mm VESA mount	Optional SU-560 100 x 100mm VESA mount	Supplied 100 x 100mm VESA mount
Measurements			
Dimensions W x H x D	372 x 336 x 264mm (14 3/4 x 13 3/8 x 10 1/2 inches)	455.8 x 368.3 x 101.7mm (18 x 14 5/8 x 4 1/8 inches) (without a stand) 455.8 x 435.7 x 302mm (18 x 17 1/4 x 12 inches) (with SU-560 optional stand)	505 x 444 x 119mm (20 x 17 5/8 x 4 3/4 inches)
Mass	6.2Kg	6.7 kg (14 lb 12 oz) 7.1 kg (15 lb 10 oz) (with two BKM-229X installed)	8.6 kg (18 lb 15 oz)
Power			
Requirements	AC 100V - 240V, 50/60Hz	AC 100-240 V, 50/60 Hz, 0.92 A-0.40 A DC IN: 24 V 3.5 A 5 V 0.030 A (Supplied from AC adaptor) AC Adaptor (Sony, AC-110MD) (optional) AC IN: 100 V-240 V, 50/60 Hz, 1.53 A-0.58 A DC OUT: 24 V 5.0 A 5 V 0.060 A	AC 100 V- 240V, 50/60Hz
Consumption	40W	Maximum: approx. 85 W (when two BKM-229X are installed)	100W
Operating conditions			
Temperature	0 to 35°C (32 to 95°F)		
Humidity	30 to 85 % (no condensation)		
Storage conditions			
Temperature	-20 to +60 °C (-4 to +140 °F)		
Humidity	0 to 90 % (no condensation)		
Pressure	700 to 1060 hPa		

	LCD Monitor	OLED
	LMD-2451MD	PVM-2551MD
		
Panel		
Panel Type	LCD a-Si TFT Active Matrix LCD with anti reflection (AR) coated protection panel	OLED (Organic Light Emitting Diode) with anti reflection film (AG-AR) coated protection panel
Resolution	1920 x 1200 pixels (WUXGA)	1920 x 1080 pixels (Full HD)
Effective picture size (WxH)	518 x 324mm (20 1/2 x 12 7/8 inches)	543.4 x 305.6mm (21 1/2 x 12 1/8 inches)
Diagonal	609mm (24 inches)	623.4mm (24 5/8 inches)
Aspect	16:10	16:9
Viewing Angle	178°	
Input		
RGB Component	BNC type (x3), RGB: 0.7 Vp-p ±3 dB (Sync On Green, 0.3 Vp-p sync negative) Component: 0.7 Vp-p ±3 dB (75% chrominance standard colour bar signal)	
External Sync	BNC (x1)	
Y/C	4-pinMini DIN x 1 Y:1.0Vp-p +3dB sync negative C: 0.286Vp-p +- 3dB (NTSC burst signal level), 0.3Vp-p +3dB (PAL burst signal level)	
Composite	BNC (x1) 1.0Vp-p +3dB, sync negative (NTSC/PAL)	
SD/HD - SDI	Yes (x2 with optional board)	
Computer input		
Analogue HD-15	D-sub 15-pin (x1) R/G/B: 0.7 Vp-p, sync positive (Sync On Green, 0.3 Vp-p sync negative) Sync: TTL level (polarity free, H/V separate sync) Plug & Play function: corresponds to DDC2B	
DVI-D	TMDS single link (x1)	
Output		
RGB Component	BNC (x3) loop through with 75Ohms automatic terminal function	
Y/C	Mini-DIN 4-pin (x1), Loop-through, with 75 ohms automatic terminal function	
Composite	BNC (x1) loop through with 75 Ohms automatic terminal function	
SD/HD-SDI	TMDS single link (x1 with optional board)	
Computer Output		
DVI-D	TMDS single link (x1 with optional board)	
Other		
Remote	Parallel 8pin modular Serial RS-232C 9-pinD-sub serial ETHERNET RJ-45	
Stand	Optional SU-560100 x 100mm VESA mount	
Measurements		
Dimensions W x H x D	602 x 386 x 110mm (23 3/4 x 15 1/4 x 4 3/8 inches)	618.4 x 376 x 102.1mm (24 3/8 x 14 7/8 x 4 1/8 inches)
Mass	8.7Kg (with 2 x BKM-229X installed)	8.1 kg (17 lb 14 oz)
Power		
Requirements	AC 100V - 240V, 50/60Hz DC 24V 3.5A; DC 5V 0.03A	AC 100V - 240V, 50/60Hz DC 24 V/5.0 A, 5 V/0.060 A
Consumption	115W	135W
Operating conditions		
Temperature	0 to 35°C (32 to 95°F)	
Humidity	30% to 85 % (no condensation)	
Storage conditions		
Temperature	-20 to +60°C (-4 to 140°F)	
Humidity	0 to 90 % (no condensation)	
Pressure	700 to 1060 hPa	

3D LCD Monitor

LMD-4251TD



LMD-3251MT



LMD-2451MT



Panel			
LCD Panel Type	42" a-Si TFT Active Matrix LCD	a-Si TFT Active Matrix LED with anti refelection (AR) coated protection panel	LCD a-Si TFT Active Matrix LCD with anti reflection (AR) coated protection panel
Resolution	1920 x 1080 pixels, Full HD	1920 x 1080 pixels (Full HD)	1920 x 1200 pixels (WUXGA)
Effective picture size (H x W)	930 x 523mm (36 3/4 x 20 3/4 inches)	698.4 x 392.9 mm 27 1/2 x 15 1/2 inches	518.4 x 324.0 mm (20 1/2 x 12 7/8 inches)
Effective picture size (diagonal)	1067 mm (Approx. 42 inches)	801.3 mm, 31 5/8 inches	613.2 mm (24 1/4 inches)
Aspect	1067 mm (Approx. 42 inches)	16:9	16:10
Viewing angle (3D)	40° at a viewing distance more than 600mm, crosstalk less than 7% (typical)	35° at a viewing distance more than 620 mm, crosstalk less than 7% (typical)	50° at a viewing distance more than 300 mm, crosstalk less than 7% (typical)
Viewing angle (2D)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)
Colours	Approx. 16.7 million colours		
Input			
Composite	BNC (x1), 1.0 Vp-p ±3dB sync negative		
Y/C	Mini DIN 4-pin (x1) Y:1.0Vp-p +3dB sync negative, C(Burst):0.268Vp-p/NTSC 0.3Vp-p/PAL		
RGB, Component	BNC (x3) RGB: 0.7Vp-p +- 3dB (Sync on Green, 0.3Vp-p sync negative) Component: 0.7Vp-p (75% chrominance standard colour bar signal)		
DVI-D	DVI-D (x1) TMDS single link		
HD15	D-sub 15-pin (x1),R/G/B: 0.7 Vp-p sync positive (Sync On Green, 0.3 Vp-p sync negative)Sync: Total level (polarity free, H/V separate sync)wPlug & Play function: corresponds to DDC2B		
External Sync	BNC (x1), 0.3 Vp-p to 4.0 Vp-p ± bipolarity ternary or negative polarity binary		
Option slot	Two (2) ports, Signal format: H: 15 kHz to 45 kHz, V: 48 Hz to 60 Hz		
SD/HD/3G-SDI	Yes (2 x with optional boards)		
Dual HD-SDI (3D)		Yes (2 x with optional boards)	
Parallel remote	Modular connector 8-pin (x1) (Pin-assignable)		
Serial remote	D-sub 9-pin (RS-232C) (x1), RJ-45 modular connector (Ethernet) (x1) (10BASE-T/100BASE-TX)		
Output			
Composite	BNC (x1), Loop-through, with 75 ohms automatic termination		
Y/C	Mini DIN 4-pin (x1), Loop-through, with 75 ohms automatic termination		
RGB, Component	BNC (x3), Loop-through, with 75 ohms automatic termination		
External sync	BNC (x1), Loop-through, with 75 ohms automatic termination		
SD/HD/3G-SDI	Yes (2 x with optional boards)		
Dual HD-SDI (3D)	Yes (2 x with optional boards)		
Audio monitor out	Phono jack (x2) (L, R)		
Output		DVI-D TMDS single link (x1 with optional board)	
Speaker (Built-in)	1.0 W + 1.0 W (stereo)		
Measurements			
Dimensions (W x H x D)	1027 x 616 x 130mm (40 1/2 x 24 3/8 x 5 1/8 inches)	783 x 479.2 x 124.3 mm, 783 x 582.8 x 229 mm (with SU-32FW optional stand) 30 7/8 x 18 7/8 x 5 inches, 30 7/8 x 23 x 9 1/8 inches (with SU-32FW optional stand)	602.4 x 386.2 x 110 mm (23 3/4 x 15 1/4 x 4 3/8 inches) (including projections)
Mass (with options)	23.5 kg (51 lb 13 oz) (with 2 x BKM-229X)	13.8 kg (when 2x BKM-229X installed) 30 lb 7 oz (when 2x BKM-229X installed)	8.7Kg (with 2 x BKM-229X installed)
Power			
Requirements	AC 100 V to 240 V, 50/60 Hz, 2.3 A to 1.1 A	AC 100V - 240V, 50/60Hz DC 24V 3.5A; DC 5V 0.03A	
Consumption	Maximum: approx. 230 W (with 2 x BKM-229X)	Approx. 100 W (max.) (with 2 x BKM-229X)	135W
Operating conditions			
Temperature	0°C to 35°C (Recommended: 20°C to 30°C)32°F to 95°F (Recommended: 68°F to 86°F)		
Humidity	30% to 85% (no condensation)	30% to 85% (no condensation)	30% to 85 % (no condensation)
Storage/Transporting conditions			
Temperature	-20°C to +60°C (-4°F to +140°F)		
Humidity	0% to 90% (no condensation)		
Pressure	700 hPa to 1060 hPa		

Head Mount display

3D HMS-3000MT



Panel	
Panel	Active Matrix OLED
Picture Size (Diagonal)	0.7-inch
Effective Picture Size (H x V)	15.6 x 8.88 mm
Pixel pitch	12µm
Resolution (H x V)	1280x720
Aspect	16:9
Color Display	Approx. 16.7 million colors
SDI, DVI-D	SDI/HD-SDI (x2), DVI-D (x2), TMDS Single link
SDI Output, DVI-D Output, HMM Output	SDI/HD-SDI (x2) (Through), DVI-D (x2) (Through), HMM (x2)
Power Requirements	HMM-3000MT : DC IN: 24 V/1.5A (Supplied from AC adaptor), AC Adaptor (Sony, AC-80MD): AC IN: 100-240 V, 50/60 Hz, 1.0-0.5A DC OUT: 24 V/3.3A
Power Consumption	36W
Supplied Accessories	Before Using this Unit (1), CD-ROM (Instructions for Use) (1), AC-80MD AC adaptor (1), AC-80MD Instructions for Use (1), Service Contact List (1) HMM-3000MT head mounted monitor(1), HMO-CA50M head mounted display cable (x1, 5m)
Optional Accessories	An additional HMM-3000MT Head Mounted Monitor and an additional HMO-CA50M Head mount display cable can be added so that a total of 2 Head Mount displays can be used per system.

Public displays




FWD-S46H2








FWD-S42H2



Panel	
LCD Panel Type	α-Si TFT Active Matrix LCD Direct lit type LED Backlight
Resolution	1920 x 1080 pixels, Full HD
Effective picture size (WxH)	1018.1 x 572.7 mm (40 1/8 x 22 5/8 inches)
Panel size (diagonal)	46 inches
Pixel pitch	0.53 x 0.53 mm
Colour depth	8 bits + FRC, 1.06 billion colours
Contrast ratio	4,000 : 1 (typical)
Viewing Angle	178 degrees (typical)
Luminance	700 cd/m2 (typical)
Signal	
Colour signal	NTSC, PAL
Sampling rate	13.5 MHz to 165 MHz
Input	
Digital Video	HDMI(1080p) in with audio in DVI in with audio in Rev. 1.0 compliant DVI out
Analog video	HD15 in with audio in (RGB/Component Video) HD15 out (RGB/Component Video) Composite Video in/out with audio in** (BNC (x2)) Component Video in with audio in** (pin jack (x3))
Remote control	Network port (RJ45, 10BASE-T/100BASE-TX), RS-232C (D-sub 9-pin, straight)
Audio	Audio out (L/R, pin jack (x2))
Speaker out	L/R, 7 W + 7 W, 6 ohms
Option slot	x1 for BKM-FW16
Measurements	
Dimensions W x H x D	1,053.6 x 608.2 x 84.0 mm (41 1/2 x 24 x 3 3/8 inches) (excluding protruding parts)
Mass	22.7 kg (50.0 lb)
Power	
Requirements	AC 100 V to 240 V, 50/60 Hz, 1.4 A (maximum)
Consumption	100 W (typical) 140 W (maximum)
Operating conditions	
Temperature	0°C to 40°C (32°F to 104°F)
Humidity	20% to 90%, no condensation
Storage conditions	
Temperature	-10°C to 40°C (14°F to 104°F)

	3D LCD Monitor		
	FWD-40W600P	FWD-47W800P/ FWD-55W800P	FWD-84X9005
			
Display Features			
Screen Size (measured diagonally)	40" (40")	47" (47.0"), 55" (54.6")	84"
Screen Size (cm)	101.6 cm	119.3, 138.8	213.5cm
Picture			
Display Resolution	Full HD		4K (3840 x 2160)
Aspect Ratio	16:9		16:9
Dimming Type	Frame Dimming		Local Dimming
Display Device	LCD		LCD
Backlight Type	LED		Dynamic Edge LED
Video Processing	X-Reality PRO		4K X-Reality ProTM
Motionflow	Motionflow XR 400 Hz		Motionflow XR 800 Hz
System			
Colour System			PAL, SECAM, NTSC 3.58, NTSC 4.43
Video Signal	1080/24p (HDMI only), 1080/60i, 1080/60p (HDMI / Component), 1080/50i, 1080/50p (HDMI / Component), 480/60i, 480/60p, 576/50i, 576/50p, 720/60p, 720/50p, 1080/30p (HDMI only), 720/30p (HDMI only), 720/24p (HDMI only)		3840 x 2160/24P (HDMI 2/3), 3840 x 2160/25P (HDMI 2/3), 3840 x 2160/30P (HDMI 2/3), 4096 x 2160/24P (HDMI 2/3), 1080/24p (HDMI only), 720/60p, 720/50p, 1080/30p (HDMI only), 720/30p (HDMI only), 720/24p (HDMI only), 1080/60i, 1080/60p (HDMI/Component), 1080/50i, 1080/50p (HDMI/Component), 480/60i, 480/60p, 576/50i, 576/50p
Audio			
Audio Power Output	8W + 8W	10W+10W	12.5W+12.5W+12.5W+12.5W
Sound Mode			Dynamic, Standard, Clear Voice
Surround Effect			Cinema, Sports, Music, Game
Sound Enhancer			Yes
S-Master		Yes	
S-Force		S-Force Front Surround 3D	
Dolby®			Dolby Digital, Dolby Digital Plus, Dolby Pulse
Network Features			
Skype™	Ready		
Wi-Fi Direct/WiFi Integrated	Yes		
TrackID			Yes
Media Remote			Yes
Video Search			Yes
Sony Entertainment Network			Yes
Apps			Yes
Internet Browser	Yes (Opera)		
Other Features			
USB Play	Yes (USB viewer supports FAT16, FAT32, exFAT & NTFS file systems)	MPEG1/MPEG2PS/MPEG2TS/AVCHD/MP4Part10/MP4Part2/AVI(XVID)/AVI(MotionJpeg)/MOV/WMV/MKV/WEBM/3GPP/MP3/WMA/WAV/JPEG/MPO /RAW (only 65W855P)	Yes (USB viewer supports FAT16, FAT32 and exFAT file systems.)
BRAVIA Sync			Yes
i-Manual	Yes		
LightSensor		Yes	
Inputs and Outputs			
AC Power Input	AC Adaptor (external)	Yes	1 (REAR)
RF Connection Input(s)			1 (Bottom)
Composite Video Input(s)	1 (Rear Hybrid w/Component)		2 (1 Rear/1 Rear Hybrid w/Component) *Depends on the area
Component Video (Y/Pb/Pr) Input(s)		1 (Rear/Hybrid)	1 (Rear Hybrid w/Composite)
HDMI™ Connection(s) (Total)	4 (1 Side/3 Bottom)	4	4 (2 Side/2 Bottom)
PC In (D-Sub) + Audio In (Stereo Mini)	Yes	1	1 (D-Sub : Side, Audio IN : Side Hybrid w/HDMI)
Analogue Audio Input(s) (Total)	2 (Rear)		3 (2 Rear/1 Side)
Digital Audio Output(s)	1(Rear)		1 (Bottom)
Audio Out	1 (Side/Hybrid w/HP)		1 (Side/Hybrid w/HP)
Headphone Output(s)		1 (Side/Hybrid w/Audio Out)	
USB	2 (Side)	3port	2 (Side)
Ethernet Connection(s)	1 (Rear)	1 (Vertical)	1 (Bottom)
HDMI® PC Input	Yes		
Power			
Power Requirements (voltage)		AC 220-240V	AC110-240V
Power Requirements (frequency)		50Hz	50 / 60Hz
Measurements (Approx.)			
TV only (W x H x D)	92.6 x 55.6 x 8.9 (4.9) cm	Approx. 108.3x63.9x6.4(4.62) cm	Approx. 2137 x 1136 x 90.0mm
TV with Stand (W x H x D)	92.6 x 58.4 x 16.2 cm	Approx. 108.3x67.2x29.8 cm	Approx. 2137 x 1511 x 567mm
Weights			
TV only	7.4 Kg	Approx. 14.6 Kg	Approx. 80.0 Kg
TV with Stand	7.9 Kg	Approx. 16.7 Kg	Approx. 97.9 Kg
Supplied Accessories			
Remote Control		RM-ED052	RM-GD025
3D Glasses			BKM-30G x 2
Optional Accessories			
Wallmount Bracket			SU-WL500

	Monochrome Diagnostic Display		
	LMD-DM50	LMD-DM30	LMD-DM20
			
Panel			
LCD Panel Type	a-Si TFT Active Matrix LCD (Monochrome)		
Resolution	Landscape 2560 × 2048 pixels (QSXGA) Portraite 2048 × 2560	Landscape 2048 × 1536 (QXGA) Portraite 1536 × 2048	Landscape 1600 × 1200 pixels (UXGA) Portraite 1200 × 1600 pixels
Effective picture size (WxH)	422.4 × 337.9 mm (16 3/4 × 13 3/8 inches)	423.9 × 318.0 mm (16 3/4 × 12 5/8 inches)	432.0 × 324.0 mm (17 1/8 × 12 7/8 inches)
Diagonal	21.3-inch	20.8-inch	21.3-inch
Aspect	Landscape 5:4 Portrait 4:5	Landscape 4:3 Portrait 3:4	Landscape 4:3 Portrait 3:4
Viewing Angle	85°/85°/85°/85° (typical) (up/down/left/right contrast > 20:1)	85°/85°/85°/85°(typical) (up/down/left/ right, contrast > 10:1)	85°/85°/85°/85° (typical) (up/down/left/ right, contrast > 10:1)
Luminance	Panel:1100 cd/m2 typ 410/500 cd/m2 (calibrated to 410 cd/m2 by factory default) Contrast Ratio 850:1 typ	Panel:1000 cd/m2 typ 410/500 cd/m2 (calibrated to 410 cd/m2 by factory default) Contrast Ratio 900:1 typ	Panel:1800 cd/m2 typ 410/500 cd/m2 (calibrated to 410 cd/m2 by factory default) Contrast Ratio 700:1 typ
Input			
DisplayPort	DisplayPort connector (x1)		
DVI-D	DVI-D (x1) TMDS Dual link		
Measurements			
Dimensions W x H x D	Landscape 474.5 × 479.9/541.4 × 220 mm (18 3/4 × 19/21 3/8 × 8 3/4 inches) Portrait 390 × 522.2/583.7 × 220 mm (15 3/8 × 20 5/8/23 × 8 3/4 inches)	Landscape 474.0 × 468.4/529.9 × 220 mm (18 3/4 × 18 1/2/20 7/8 × 8 3/4 inches) Portrait 367 ×5 21.9/583.4 × 220 mm (14 1/2 × 20 5/8/23 × 8 3/4 inches)	Landscape 474.0 × 468.4/529.9 × 220 mm (18 3/4 × 18 1/2/20 7/8 × 8 3/4 inches) Portrait 367 ×5 21.9/583.4 × 220 mm (14 1/2 × 20 5/8/23 × 8 3/4 inches)
Mass	12.3 kg (27 lb 1.9 oz) including tilt stand of 4.2 kg (9 lb 4.2 oz)	11.6 kg (25 lb 9.2 oz) including tilt stand of 4.2 kg (9 lb 4.2 oz)	12.0 kg (26 lb 7.3 oz) including tilt stand of 4.2 kg (9 lb 4.2 oz)
Power			
Requirements	AC 100 V to 240 V, 50/60 Hz, 1.5 A to 0.6 A		
Consumption	90 W typ		85 W typ
Operating conditions			
Temperature	5 °C to 40 °C (41 °F to 104 °F)		
Humidity	30% to 80 % (no condensation)		
Storage conditions			
Temperature	-20 to +60°C (-4 to 140°F)		
Humidity	10 to 85 % (no condensation)		
Pressure	700hPa to 1060hPa (Operating) 266hPa to 1060hPa (Storage)		
Supplied Accessories			
	AC power cord (1) DVI cable(Dual Link) (1) USB cable (1) CD-ROM (1) Before Using this Display (1) Sales Companies Guide		
Optional Accessories			
	Calibration Kit LMD-KT10 Display Network Manager LMD-SN10		

	Colour Diagnostic Display	
	LMD-DM30C	LMD-DM20C
		
Panel		
LCD Panel Type	a-Si TFT Active Matrix LCD	
Resolution	Landscape 2048 × 1536 (QXGA) Portrait 1536 × 2048	Landscape 1600 × 1200 pixels (UXGA) Portrait 1200 × 1600 pixels
Effective picture size (WxH)	433.2 × 324.9 mm (17 1/8 × 12 7/8 inches)	433.2 × 324.9 mm (17 1/8 × 12 7/8 inches)
Diagonal	21.3-inch	21.3-inch
Aspect	Landscape 4:3	Landscape 4:3
Viewing Angle	85°/85°/85°/85° (typical) (up/down/left/right, contrast > 10:1)	85°/85°/85°/85° (typical) (up/down/left/right, contrast > 10:1)
Colours	16.77 million colors out of 68 billion colours Approx. 1.0643 billion colors (DisplayPort 10 bit input)	
Luminance	Panel:800 cd/m2 typ 410/300 cd/m2 (calibrated to 410 cd/m2 by factory default) Contrast Ratio 750:1 typ	Panel:950 cd/m2 typ 410/300 cd/m2 (calibrated to 410 cd/m2 by factory default) Contrast Ratio 900:1 typ
Input		
DisplayPort	DisplayPort connector (x1)	DisplayPort connector (x1)
DVI-D	DVI-D (x1) TMDS Dual link	DVI-D (x1) TMDS Single link
Measurements		
Dimensions W x H x D	Landscape 474.0 × 468.4/529.9 × 220 mm (18 3/4 × 18 1/2/20 7/8 × 8 3/4 inches) Portrait 367 ×5 21.9/583.4 × 220 mm (14 1/2 × 20 5/8/23 × 8 3/4 inches)	Landscape 474.0 × 468.4/529.9 × 220 mm (18 3/4 × 18 1/2/20 7/8 × 8 3/4 inches) Portrait 367 ×5 21.9/583.4 × 220 mm (14 1/2 × 20 5/8/23 × 8 3/4 inches)
Mass	12.3 Kg (27 lb 1.9 oz) including tilt stand of 4.2 kg (9 lb 4.2 oz)	12.3 Kg (27 lb 1.9 oz) including tilt stand of 4.2 kg (9 lb 4.2 oz)
Power		
Requirements	AC 100 V to 240 V, 50/60 Hz, 1.5 A to 0.6 A	
Consumption	120 W typ	
Operating conditions		
Temperature	5 °C to 40 °C (41 °F to 104 °F)	
Humidity	30% to 80 % (no condensation)	
Storage conditions		
Temperature	-20 to +60°C (-4 to 140°F)	
Humidity	10 to 85 % (no condensation)	
Pressure	700hPa to 1060hPa (Operating) 266hPa to 1060hPa (Storage)	
Supplied Accessories		
	AC power cord (1) DVI cable(Dual Link)(1) USB cable(1) CD-ROM(1) Before Using this Display (1) Sales Companies Guide	
Optional Accessories		
	Calibration Kit LMD-KT10 Display Network Manager LMD-SN10	

Colour Printers

UP-25MD



UP-D25MD



UP-DR80MD



System	Analogue	Digital	Digital
Format	A6		A4
Printing system	Dye sublimation printing technology		
Resolution	Approx. 423 dpi		Approx. 301 dpi
Gradations	8bit (256 levels) processing each for Yellow, Magenta, Cyan		
Print matrix	UP-21L/24LA: 2,132 x 1,600 dots UP-21S/24SA: 1,600 x 1,260 dots	21L / 24LA : 2100x1600 dots 21S / 24SA : 1600x1200 dots	A4 size UPC-R80MD: 3400 x 2392 dots Letter size UPC-R81MD: 3192 x 2464 dots
Printable area	UP-21L/24LA: 127.9 x 96.0 mm (5 1/8 x 3 3/4 inches) UP-21S/24SA: 96.0 x 75.6 mm (3 3/4 x 3 inches)	21L / 24LA : 126 x 96mm (5 x 3 3/4 inches) 21S/ 24SA : 96 x 72 mm (3 3/4 x 2 7/8 inches)	A4 size: 3,400 x 2,392 pixes / Letter size: 3,192 x 2,464 pixes / A4 size:287x202mm / Letter size: 269x208mm
Memory	8 frame memories	NA	
Tray capacity	S Size tray: Max. 80 sheets L Size tray: Max 50 sheets		50 sheets
Printing time	UP-21L : approx. 29 seconds, UP-24LA : approx. 36 seconds, UP-21S : approx. 19 seconds, UP-24SA : approx. 25 seconds		A4 size: Approx. 76 seconds Letter size: Approx. 72 seconds
Inputs/outputs	Video, S-Video, RGB, SYNC, HDTV IN/OUT signals 1080/59.94i, 1080/50i (2:1 interlace) 720/59.94p, 720/50p (progressive)	Hi-Speed USB (USB 2.0)	
Control connectors	Remote 1 (special mini jack) for optional RM-5500 (discontinued), Remote 2 (stereo mini jack) for optional RM-91 or FS-24, RS-232C interface port (D-sub 25-pin) for external computer	NA	
Measurements			
Dimensions	212 (W) x 98 (H) x 398 (D)mm, (8 3/8 x 3 7/8 x 15 5/8 inches)		Approx. 317(W) x 207(H) x 425(D)mm (12 1/2 (W) x 8 1/8 (H) x 16 3/4 (D) inches)
Mass	5.7 kg (12 lb 6 oz)	5.5 kg (12 lb 2 oz)	Approx. 11.5 kg (25.3 lbs)
Power			
Requirements	AC 100 V to 240 V, 50/60Hz		
Consumption	1.7 A to 1.0 A		100 to 120 V: Max.2.8 A / 220 to 240 V: Max.1.2 A
Operating conditions			
Temperature	5 °C to 35 °C (41 °F to 95 °F)		
Humidity	20% to 80% (non condensing)		
Storage/Transporting conditions			
Temperature	-20 °C to 60 °C (-4 °F to 140 °F)		
Humidity	20% to 80% (non condensing)		
Other			
Supplied accessories	CD-ROM (1) (Printer Driver, Operating Instructions (PDF) 21 Languages),Before Using this Printer (1) (21 Languages), Paper Tray (1), Stopper (1), Cleaning Cartridge (1)	CD-ROM (1) (Operating Instructions (PDF) 21 Languages), Before Using this Printer (1) (21 Languages), Paper Tray (1), Stopper (1), Cleaning Cartridge (1), USB Cable (1)	Power Cable (1), USB cable (1), CD ROM (1), Paper holder (2), Cleaning ribbon (1), Before using this printer (1), Software license agreement




Colour Printers



UP-55MD





Analogue

System	Analogue
Format	A5
Printing system	Dye sublimation printing
Resolution	Approx. 379 dpi
Gradations	8 bits (256 levels) processing each for Yellow, Magenta and Cyan
Print matrix	2528 x 1920 dots (full screen print)
Printable area	169 (W) x 129 (H) mm (6 3/4 x 5 1/8 inches)
Printing time	Approx. 20 seconds
Tray capacity	Max. 100 sheets
Memory	8 frame memories
Control connectors	Remote 1 (special mini) for optional RM-5500, Remote 2 (stereo mini) for optional RM-91, RS-232C interface port (D-sub 25-pin) for external computer
Inputs/outputs	IN/OUT : Video, S-Video, RGB SYNC OUT : USB host port for USB flash memory
Measurements	
Dimensions	Approx. 280 x 125 x 398mm (11 1/8 x 5 x 15 3/4 inches) excluding the projection parts
Mass	Approx. 9 kg (19 lb 13 oz)
Power	
Requirements	AC 100 to 120 V, 50/60 Hz, AC 220 to 240 V, 50/60 Hz
Consumption	100 to 120 V: Max.2.8 A / 220 to 240 V: Max.1.2 A
Operating conditions	
Temperature	5 °C to 35 °C (41 °F to 95 °F)
Humidity	20% to 80% (non condensing)
Storage/Transporting conditions	
Temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Humidity	20% to 90% (non condensing)
Other	
Supplied accessories	Paper tray (1), Ink ribbon holder (1), Before using printer" document (1), Instruction for use (1), AC power cord (1), CD-ROM with PDF files of multi-language usage instructions) (1)

	Black & White Printers		
	UP-897MD	UP-D897	UP-D711MD
			
System	Analogue		Digital
Format	A6		A7/A8
Printing system	Thermal Printing Technology		
Resolution	325 dpi		301 dpi
Gradations	256 levels (8-bits processing)		
Print matrix	EIA: 1210 x 490 dots max CCIR: 1210 x 582 dots max	4096 x 1280 dots (max.)	2688x896 dots
Printing time	Approx. 2 seconds (High Speed & standard image mode) Approx. 3.3 seconds (Normal Speed & standard image mode)		Approx 5 sec. (High Speed & standard image mode) Approx 8 sec. (Normal Speed & standard image mode)
Tray capacity	20m (UPP-110HD Et UPP-110S), 18m (UPP-110HG)		12.5 m (UPP-84HG), 13.5 m (UPP-84S)
Control connector	Remote (stereo mini jack) for optional RM-91 or FS-24		
Memory	10 frames (800 k x 8 bits per frame)	4096 x 1280 pixels max	896 x 2688 pixels max
Inputs/outputs	VIDEO IN / OUT (BNC type) EIA or CCIR composite video signals (automatic detection)	Hi-Speed USB (USB 2.0)	Hi-Speed USB (USB 2.0)
Measurements			
Media Size	Roll width of 110mm		Roll width of 84 mm
Print size	Mode Standard Image : EIA: 94 x 73mm & CCIR: 94 x 71mm Mode Side Image : EIA: 124 x 96mm & CCIR: 127 x 96mm	320 x 100mm (max.) (12 5/8 x 4 inches)	50,4 mm x 75,7 mm 56,8 mm x 75,7 mm 75,7 mm x 75,7 mm 75,7 mm x 101,1 mm 75,7 mm x 227,1 mm
Dimensions	154 x 88 x 240mm (6 1/6 x 3 1/2 x 9 1/2 inches)		140 x 70 x 125 mm (5 5/8 x 2 7/8 x 5 inches)
Mass	Approx. 2.6 kg (5 lb 11 oz)		Approx. 1kg
Power			
Requirements	AC 100 to 240 V, 50/60 Hz		DC 12V to 24V
Consumption	1.5 A to 0.8 A		6 A to 3 A
Operating conditions			
Temperature	5 °C to 35 °C (41 °F to 95 °F)		
Humidity	20% to 80%		
Storage/Transporting conditions			
Temperature	-20 °C to 60 °C (-4 °F to 140 °F)		
Humidity	20% to 80%		
Other			
Supplied accessories	Thermal head cleaning sheet (1) Operating instructions (1) Media label (1)	Thermal head cleaning sheet (1) CD-ROM (including multi-lingual operating instructions, Operating instructions Readme and printer driver) (1), Media label (1) USB cable (1) Software License Agreement (1)	Thermal head cleaning sheet (4-419-859) (1) CD-ROM (including multi-lingual operating instructions, Readme and printer driver) (1) Before Using this Printer (1)

Black & White Printers		
	UP-D72XR	UP-970AD
		
System	Digital	Analogue & Digital
Format	8" x 10" (20 x 25 cm)	A5/A4
Printing system	Thermal Printing Technology	
Resolution	300 dpi	325 dpi
Gradations	512 grey levels (9 bit)	8-bit (256 levels) processing
Print matrix	2743 x 2320 dots	Digital: 3414 x 2560 dots EIA: 1280 x 508 dots CCIR: 1280 x 612 dots
Throughput	Approx. 40 seconds	Approx. 8 seconds / image (in standard mode)
Tray capacity	Paper: 100 sheets / Film: 100 sheets	25m (UPP-210HD and UPP-210SE), 12.5m (UPT-210BL)
Memory	16 MB	Digital mode: 3414 x 2560 pixels max. Analog mode: 6 frames (800 k x 8 bits per frame)
Control connector		Remote (stereo mini jack) for optional RM-91 or FS-24
Inputs/outputs	USB connector x 1	Digital: Hi-Speed USB (USB 2.0), Analogue: VIDEO IN / OUT (BNC type) EIA or CCIR composite video signals (automatic detection)
Measurements		
Media Size	Sheet of 8" x 10" (20 x 25 cm)	Paper width of 210mm
Print size	232.2 x 196.4mm (9 1/4 x 7 3/4 inches)	Mode Standard Image EIA: 187 x 140mm & CCIR: 187 x 138mm Mode Side Image EIA: 249 x 188mm & CCIR: 249 x 186mm
Dimensions	412 x 210 x 431mm (16 1/4 x 8 3/8 x 17 inches)	316 x 132.5 x 305mm (12 1/2 x 5 1/4 x 12 1/8 inches)
Mass	Approx. 15.5 kg (34 lb 3 oz)	Approx. 8 kg (17 lb 10 oz)
Power		
Requirements	AC 100 to 240 V, 50/60 Hz	AC 100 to 240 V, 50/60 Hz
Consumption	Standby: 12.6 W (actual measurement) Black printing: 190 W (actual measurement) Max: 270 W	2.4 A to 1.3 A
Operating conditions		
Temperature	10 °C to 30 °C (50 °F to 86 °F)	5 °C to 35 °C (41 °F to 95 °F)
Humidity	20% to 80% (non-condensing)	20% to 80%
Storage/Transporting conditions		
Temperature	-20 °C to 60 °C (-4 °F to 140 °F)	-20 °C to 60 °C (-4 °F to 140 °F)
Humidity	20% to 90% (non-condensing)	20% to 80%
Other		
Supplied accessories	Paper tray (1), Thermal Head Cleaning Kit (1), Cleaning Sheets (2), Tray guide cover (1), Connection cable (1), Operation guide (1), CD-ROM (operation manual) (1).	Head cleaning sheets (1), UPP-210HD High density printing paper (1), BNC cable (1), USB cable (1), Operation guide (Getting Started) (1), CD-ROM (Instruction for use, driver software) (1), Media label (1) Software License Agreement (1)

Diagnostic Film Imagers		
	UP-DF550	UP-DF750
		
System	Direct Thermal Printing	
Printing system		
Resolution	320dpi	604 dpi
Gradations	12 bit	14 bit processing
Print matrix	5232 x 4360 dots (for 14 x 17 inch film)	8,256 x 9,888 dots (for 14 x 17 inch film)
Throughput	Approx. 64 sheets (per hour for 14 x 17 inch film) Approx. 85 sheets (per hour for 8 x 10 inch film)	Approx. 75 prints (per hour for 14 x 17 inch film) Approx. 90 prints (per hour for 8 x 10 inch film)
Film supply tray	Two trays	
Tray capacity	125 sheets (max.)	
Maximum density	UPT-517BL, UPT-514BL, UPT-512BL, UPT-510BL: 3.2	UPT-M710BL, UPT-M712BL: 3.8 UPT-517BL, UPT-514BL, UPT-512BL, UPT-510BL: 3.2
Inputs/outputs	DICOM port x 1 (RJ-45 Modular jack)	
Measurements		
Media size	354 x 430mm (14 x 17 inches), 279 x 354mm (11x 14 inches), 253 x 304mm (10 x 12 inches), 202 x 253mm (8 x 10 inches)	
Dimensions	600 x 316 x 686mm (23 5/8 x 12 1/2 x 27 1/8 inches)	
Mass	Approx. 63 kg (138 lb 14 oz)	Approx. 67 kg (147 lb 11 oz)
Power		
Requirements	AC 100 to 240 V, 50/60 Hz	AC 100-120 V/ AC 200-240 V, 50/60 Hz
Consumption	4.4 to 1.8 A	4.4 to 2.4 A
Operating conditions		
Temperature	10 °C to 30 °C (50 °F to 86 °F)	
Humidity	20% to 80% (non-condensing)	
Storage/Transporting conditions		
Temperature	-20 °C to 60 °C (-4 °F to 140 °F)	
Humidity	20% to 80% (non-condensing)	